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A Preliminary Report

Urinary Coproporphyrin Excretion

A. GENE PETERSEN, M.D., ***Kansas City, Missouri***

The metabolism of porphyrin compounds and the causes of porphyria and porphyrinuria are reviewed.

Urine tests for porphyrins are discussed. Five hundred tests on 146 hospitalized patients showed elevated urine coproporphyrin levels in 29.5 per cent.

Storage of urine from two to 19 days did not substantially affect the urine coproporphyrin test in seven instances.

The presence of increased levels of urinary coproporphyrin in a great variety of diseases was confirmed, rendering the test of little or no value in the differential diagnosis of conditions such as jaundice, hepatomegaly, fever, anemia, and abdominal neoplasms. Results of this study suggest that metastatic neoplasms in the liver may be another type of hepatic disease associated with elevated urinary coproporphyrins.

The test may be of some value in checking the early diagnosis of viral hepatitis, being somewhat analagous to the urinary urobilinogen test.

Purpose of Study

THE FOLLOWING STUDY WAS undertaken to evaluate the urinary coproporphyrin test in diseases in which elevated levels have been reported, as well as in diseases such as metastatic tumors of the liver for which no prior coproporphyrin studies are available. An attempt was also made to grade the degree of fluorescence obtained in the test, although Morgan reports that in screening for lead absorption fluorescence is graded only as positive or negative. In several cases the effect of storage of the urine for varying periods and rechecking for coproporphyrin was noted, since it has been stated that urine less than 24 hours old should be used as a screening test for diagnosis of porphyria.[2]

Review of Porphyrin Metabolism

Porphyrin compounds are widely distributed in nature in such important substances as hemoglobin, myoglobin, and chlorophyll.[3] The basic structure of a porphyrin compound consists of four pyrrole rings joined by four methene bridges. The production of heme necessary for hemoglobin synthesis begins with the formation of beta ketoadipic acid from the reaction of glycine and the Coenzyme A derivative of succinic acid. The subsequent products formed in order are delta amino levulinic acid, porphobilinogen, uroporphyrinogen, coproporphyrinogen, protoporphyrin, and finally the last one is heme.[4] Uroporphyrin and coproporphyrin are formed as by-products of hemoglobin anabolism from uroporphyrinogen and coproporphyrinogen respectively. The normal daily excretion of coproporphyrin varies from 60 to 280

From the Departments of Pathology and Medicine, St. Luke's Hospital, Kansas City, Mo.

micrograms in the urine and from 300 to 1100 micrograms in the feces. Uroporphyrin excretion normally is as much as 20 micrograms daily in the urine and feces together. The excretion of these two compounds has been likened to that of bilirubin, since biliary tract obstruction results in decreased fecal and increased urinary excretion of the two compounds.

Porphyria and Porphyrinuria

Disorders of porphyrin metabolism may be divided into porphyria and porphyrinuria. Porphyria is an inherited disorder with increased excretion of uroporphyrin and coproporphyrin and often porphobilinogen in the urine and feces. Porphyria is classified into erythropoietic and hepatic types. The latter is divided into symptomatic porphyria cutanea tarda, hereditary porphyria cutanea tarda, acute intermittent porphyria, and a mixture combining the latter two types.[5] Increased porphobilinogen excretion ordinarily occurs only in acute intermittent porphyria, whether the latter is found alone or combined with hereditary cutanea tarda in a mixed type of porphyria. Porphobilinogen excretion is not increased in erythropoietic porphyria and porphyria cutanea tarda. However, the Watson-Schwartz urine test for porphobilinogen may rarely be positive in lead poisoning, Hodgkin's disease, cirrhosis, carcinomatosis, poliomyelitis, and the Gullain-Barre syndrome.[6] In porphyrinuria there is increased urinary excretion of only coproporphyrin. Causes of porphyrinuria which have been reported include diseases of the liver and biliary tree such as hepatitis, cirrhosis, and obstructive jaundice; infectious mononucleosis; Hodgkin's disease and some other malignant neoplasms; myocardial infarction; acute rheumatic fever; aplastic, hemolytic, and pernicious anemias; leukemia; polycythemia vera; elliptocytosis; sprue; pellagra; fever; acute poliomyelitis; morphinism; and intoxication with gold, arsenic, benzol, and alcohol.

Porphyrins in Urine

The amounts of porphobilinogen, coproporphyrin, and uroporphyrin normally present in the urine impart no color to the urine. However, when increased amounts of uroporphyrin or coproporphyrin are present the urine may vary from red to black in color. Porphobilinogen is colorless, but after excretion will change to dark black porphobilin on standing in the sunlight.[7] All porphyrin compounds have the property of pink to red fluorescence when dissolved in strong mineral acids or organic solvents and exposed to ultraviolet light. This property is due to the methene bridges in the porphyrin molecule.[8]

In the Watson test for porphobilinogen in the urine, the differentiation from urobilinogen is made on the basis of insolubility of the porphobilinogen aldehyde pigment in chloroform, since both urobilinogen and porphobilinogen form a red color with Ehrlich's reagent. In this test, diagnostic of acute porphyria except in the rare instances mentioned above, one ml. of urine, one ml. of Ehrlich's reagent, and two ml. of saturated sodium acetate are mixed in a test tube. If no pink or red color forms, neither urobilinogen nor porphobilinogen are present. If a pink or red color forms, chloroform is added and the mixture is shaken. The presence of a pink or red color in the chloroform in the bottom of the tube due to formation of urobilinogen aldehyde denotes the presence of urobilinogen in the urine. This is the normal result. If porphobilinogen is present, a pink or red color is present in the top of the mixture due to the presence of porphobilinogen aldehyde pigment.

The presence and differentiation of uroporphyrin and coproporphyrin in the urine are made on the basis of solubility of coproporphyrin in ether, uroporphyrin being insoluble in the latter.

The qualitative urinary test for coproporphyrin is used as a screening test for lead absorption.[1] The quantitative urinary coproporphyrin level is reported to be one of the four most sensitive tests of hepatic dysfunction.[9]

Method of Study

Random urine specimens were obtained on 146 hospitalized patients, 35 clinically well student nurses, and 20 children prior to tonsillectomy while asymptomatic. Most of the specimens were obtained in the early morning, although a diurnal variation in urinary coproporphyrin excretion has been noted in patients with disturbed porphyrin metabolism. These patients often excrete more coproporphyrin during the day than at night while excretion in normal persons is relatively constant during any 24 hour period.[9] This is reminiscent of the fact, first stated by Watson *et al.*, that "considerable variation occurs in urine urobilinogen excretion at different times during the 24 hours, usually much more being eliminated during the day than at night. A number of cases have been noted in which the only significant increase was in the afternoon sample."

The urine samples were refrigerated after collection and initially tested in most instances within 36 hours, although some samples were not tested for 60 hours. The method used for qualitative determination of urinary coproporphyrin was that outlined by Morgan. Ten ml. of urine, two drops of glacial acetic acid, two drops of hydrogen peroxide, and two ml. of ether were placed in a screw-top bottle to prevent evaporation of ether. After shaking gently, the mixture was allowed to stand for 30 minutes, and

TABLE I

CORRELATION OF DEGREE OF FLUORESCENCE WITH FREQUENCY OF POSITIVE TESTS

	Patients With One or Two Positive Tests	*Patients With Three or More Positive Tests*
One Plus	36	29
Two Plus	2	25
Three Plus	1	3
Four Plus	0	1

then each tube was inspected individually in a dark room using ultraviolet light. The upper layer of ether normally has a grayish-blue appearance under ultraviolet light. The degree of fluorescence in the supernatant layer of ether was graded according to the following scheme:

No pink fluorescence ..... negative
Faint pink fluorescence ..... one plus
Moderate pink to red fluorescence .... two plus
Pink to red fluorescence ..... three plus
Very pink to red fluorescence ..... four plus

All tests were done in entirety by the writer, and the identity of the specimens by name or previous results on urine of the same patient were not known until after the result had been recorded. The number of tests performed on each patient varied from one to 12, repeated tests being performed when a one plus reaction or greater was obtained or when a disease was present which was thought a possible cause of increased urinary coproporphyrin. Several urine specimens were kept refrigerated for periods of two to 19 days to note the effect of urine storage on the urinary coproporphyrin test.

Results of Study

A total of 500 tests was performed on urine specimens of 146 hospitalized patients, and in addition 55 tests on student nurses and asymptomatic children. The 55 tests on the latter two groups were all negative for urinary coproporphyrin by the method used. In the hospitalized patients, 96 positive tests were found, or 19.2 per cent of the total tests done. The positive tests were found in 43 patients, or 29.5 per cent of the 146 patients tested. In the 32 patients in whom only one or two positive tests were obtained, 39 of 122 tests or 32 per cent were positive. However, in the 11 patients in whom three or more tests were positive, 57 of 94 tests or 61 per cent were positive. Furthermore, as shown in *Table I,* in the patients with only one or two positive tests, the great majority of tests were graded as one plus fluorescence, while in the patients with three or more positive tests, 50 per cent of the tests were graded as two plus or greater.

Seven urine specimens of three patients were refrigerated and checked for coproporphyrin at varying intervals. The results are shown in *Table II.* After storage of from two to 19 days, no specimen showed a change in the qualitative urinary coproporphyrin value of over one reading. In the specimens which were positive initially, there was usually a gradual slight decrease in the degree of fluorescence, but none of these specimens ever gave a negative reading. Some of the change may actually represent a variation in interpretation of the degree of fluorescence rather than a change in the coproporphyrin level.

Table III lists the diagnoses or conditions present in 51 of the patients whose urine was tested, together with the results of the urine coproporphyrin test. In general, the results confirm the presence of increased urinary coproporphyrin in some of the diseases listed in many articles in the literature. Thus three of four cases of portal cirrhosis showed positive tests. Only

TABLE II

EFFECT OF STORAGE OF URINE ON URINARY COPROPORPHYRIN TEST

	Patient M.A.H.			*Patient H.S.*		*Patient F.L.*	
	Urine Specimen 1	*Urine Specimen 2*	*Urine Specimen 3*	*Urine Specimen 1*	*Urine Specimen 2*	*Urine Specimen 1*	*Urine Specimen 2*
DAY							
1	2	2	2	3	2	1	0
3	3			2			0
4						1	
5	2						
6		3					
7	2						
8		2					
10		2	1				
12					1	1	0
16	2						
19		3					

TABLE III

URINARY COPROPORPHYRIN TEST

Diagnosis*	*Number of Patients* ONE OR MORE POSITIVE TESTS	ALL TESTS NEGATIVE
Portal Cirrhosis	3	1
Viral Hepatitis	3	1
Infectious Mononucleosis With Hepatitis	1	0
Jaundice Due to Chlorpromazine	0	1
Hepatomegaly Due to Heart Failure	0	1
Common Duct Stone (s)	4	1
Metastatic Carcinoma of Liver	4	3
Neoplasms Without Known Liver Metastases	9	4
Hodgkin's Disease	0	2
Fever over 100°	4	4
Pernicious Anemia	1	0
Iron Deficiency Anemia	2	2

* All cases of cirrhosis and neoplasms were verified by liver biopsy, surgery, or autopsy.

one specimen was checked on the one patient with cirrhosis whose urine was negative. Four of five cases of hepatitis were positive, including a case of infectious mononucleosis in which secondary hepatitis with a total serum bilirubin of four mg. per cent was present. In one case of liver disease in which elevated urinary coproporphyrin was not found, only one test was performed, and the disorder was of a mild degree as evidenced by a total serum bilirubin of 1.2 mg. per cent and a serum transaminase level of 98 units. The diagnosis in this case was not definitely established. The patient with jaundice associated with chlorpromazine medication had received 300 mg. of the drug. The total serum bilirubin was 2.9 mg. per cent and the transaminase 50 units. In the patients with known metastatic carcinoma of the liver, four of seven showed elevated urinary coproporphyrin levels. Of 13 other patients with known abdominal and pulmonary neoplasms, nine showed positive tests. There is a possibility of hepatic metastases in these 13 patients. The patient with a benign adenomatous polyp of the colon had a positive test on six of nine urine specimens, including two readings of two plus.

Department of Pathology and Medicine
St. Luke's Hospital, Kansas City, Missouri

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Foreign Students

The number of foreign students studying in the United States has increased 38 per cent in the last five years, the Institute of International Education reported in a survey.

The 47,245 students from 131 countries registered in U. S. colleges and universities this year represent a nine per cent increase over the number last year and an 86 per cent increase over that of the academic year 1948-49. According to all available statistics, the current figure represents the largest foreign student population in any country of the world.

The survey on foreign physicians showed a new high of 8,392 doctors from 91 countries in training here this year—an increase of 10 per cent over last year and 65 per cent over five years ago. The Far East again sent the largest number, with the Middle East showing the greatest increase—25 per cent more doctors than last year.

Workmen's Compensation

The Rights, Privileges, and the Obligations For Physicians in Kansas—Part II

M. E. PUSITZ, M.D., ***Topeka***

MANY EMPLOYERS BELIEVE THAT charges made by a "company doctor" are less. This may or may not be true, but the old adage "you get what you pay for" (and its corollary, "you pay for what you get") has been found to be basically true. There is a definite fee schedule, which is clearly delineated in the handbook, in section 51-9-7, and under other circumstances. Once a fee for a certain procedure is adopted, this remains as the fee (and for like services), and cannot be raised except by law amendment. True, this fee can be lowered voluntarily by the doctor, if he so desires, but this represents the vicious aspect of contract practice. The cut-rate price system should not be introduced into the practice of medicine. One must not confuse "cut-rate" fees with the "sliding scale of fees" which so many doctors practice. The latter is ethical and, indeed, is warranted by one code of ethics of the American Medical Association. Cut-rate prices would destroy the original intent of the law. Firstly, the elevation of the stature of man; secondly, the giving up of all recourse by the doctor, yet to regard the workman as a private patient regardless of the actual amount paid and the extent of the services rendered; thirdly, the protection afforded to the employer, or his carrier, by imposing a maximum for medical expense (with the right to pro-rate).

A.M.A. Code of Ethics

The agreement of the medical profession to work under workmen's compensation law should not be construed as contract practice in a vicious sense. The code of ethics of the American Medical Association states:

> "The interjection of a third party who has a valid interest, or who intervenes between the physician and the patient, does not *per se* cause a contract to be unethical. A third party has a valid interest when, by law or volition, the third party assumes legal responsibility and provides for cost of medical care and indemnity for occupational disability."

However, once the third party assumes this responsibility, then the stature of the patient (workman) becomes not that of the individual but that of the third party who has intervened. The schedule of fees in 51-9-7 of the handbook becomes operative. This will answer a frequent question why the doctor may charge a workman, injured on his own, a lesser fee than may be indicated in 51-9-7. This is entirely a matter at the discretion of the doctor (sliding scale of fees); is purely a personal affair.

Another complaint has to do with the duration of treatment. The first group of doctors (who speak of "cures") are more apt to terminate treatment earlier. In this, they are entirely honest and sincere; it is because they regard the remaining symptomatology as relatively unimportant (especially where few objective signs remain). The second group of doctors (maximum improvement) is more apt to give credence to this symptomatology. Treatment will be more prolonged but the ultimate final disability will be lowered. As far as the patient is concerned, pain is pain, regardless of what the doctor may or may not believe. The crux of the problem is the doctor-patient relationship which has been stressed previously. Dissatisfaction on the part of the patient (and the continued complaint of pain) is the most certain way of destroying the doctor-patient relationship; once this is destroyed, it is best for all concerned that another doctor be called into the case.

A presentation of some important provisions of our Workmen's Compensation Law and a discussion of the ways in which the physician is involved—his obligations and his rights. The importance of moral integrity to insure the best treatment and ultimately the best disability evaluation for the workman. The first section of this article may be found in the December 1959 issue of the *Journal*.

Plaintiff Doctor—Company Doctor

The apparent contradictory status of these two groups of doctors has enabled the legal profession to introduce the appellations of plaintiff doctor and company doctor; to match their appellations in their own ranks of plaintiff lawyer and defendant lawyer. These terms are not only questionable, but at times

are "vicious." Obviously, in any lawsuit (and a compensation hearing can be compared to a lawsuit), there must be a plaintiff lawyer and a defendant lawyer, or the case could not be heard (unless one side or the other or both are unrepresented by counsel). In order to sway opinion, either of members of the jury or of the doctor, these terms are glibly introduced by the "legal expert" (especially where the facts of the case are against him). Since the witness is under oath, this is not of the slightest consequence in any individual case. The young doctor is, at times, swayed by these appellations, but soon learns better with practice (to differentiate between ethics and economics). In cases tried by a judge (without a jury) seldom do these appellations appear. The manner of thinking of the "legal expert" depends upon which side of the fence he is on; his mode of approach may be entirely contradictory in two different cases. The doctor, however, regardless of which side he is on, does not conform (plaintiff or defendant); the opinion is his, and his alone.

Once a patient has been discharged by the company doctor, and especially has been given a permanent partial disability rating, and the patient is still unable to return to work for reason of pain and suffering or deformity; and the workman is desirous of obtaining such treatment as will enable him to return to work and to get relief from pain and suffering; and it is later shown that this patient could receive such treatment; then there is no question of dereliction and derelict or unreasonableness. For the employer to then turn around, after evidence has been presented, and desire the patient to return to a "company doctor" is stretching matters too far. This would undermine all the rights which the workingman has under the law, and would destroy the doctor-patient relationship so valuable for the best result. Nowhere in the law can be found a section which states that after dereliction (or even unreasonableness), the employer has the right to demand the return of the patient to a "company doctor." The question of unreasonableness, dereliction and derelict must be studied by the workmen's compensation commissioner at a hearing; the interpretation will have reference to the time (1959) and the place (Kansas). The commissioner's ruling is final (and retroactive) unless it is appealed from within a certain period of time.

Paragraph 44-510

The last provision in the first paragraph of 44-510 reads:

> "PROVIDED FURTHER, That if the services of the physician or surgeon furnished as above provided are not satisfactory to the injured workman the commissioner may authorize the appointment of some other physician or surgeon, subject to the limitations as to total charges for the benefits provided in this section and the period over which same shall extend as hereinbefore expressed."

This amendment, although introduced years ago, is clearly abreast of times, and takes due notice of the importance of the doctor-patient relationship. This is a slow process, however (and is not retroactive as in the above provision). This requires a hearing. There are so many cases on the docket of the commissioner that much time may elapse before the decision is known. There should be due cause for change of physician since this is still an argumentative point. At the same time, no doctor wishes to hold a patient unless there is excellent doctor-patient relationship. It is much to the workman's advantage to accept the company doctor and have treatment started. He may learn that the "company doctor" is a wonderful doctor. If there does not develop a satisfactory doctor-patient relationship, then action can be taken. If it is felt that there has been unreasonableness, dereliction or derelict terms may be used, and immediate transfer to another doctor is possible—this has to be substantiated at a subsequent hearing. If such terms cannot be used, then section four is invoked, and this will take at least three weeks. In the meantime, the patient does receive his treatment. By the code of ethics, a doctor does not have to accept a patient for treatment, but once he does, he must continue treatment until a reasonable period has been given to the patient for securing the services of another doctor (in this case until the commissioner grants or refuses the request of the workman). In this, the workman may invoke the status of the doctor-patient relationship, and this should be the most important factor.

Medical Profession's Qualifications

The medical profession has not hesitated to present qualifications, more so than any other profession. As stated previously, there has been a tremendous change in the entire practice of medicine, so that doctors are now more qualified than ever for the particular job they set out to do; and they are subject to more stringent regulations. Consultation is used where necessary, but the specialist is needed only for the complicated and more serious cases. Too frequently a general surgeon or general physician will stay away from a compensation case because of the legal entanglements, and because he does not want to get into a squeeze between the worker (patient) and the employer (or his carrier). Some of them fear or dislike the appellations "plaintiff doctor" or "company doctor." Another mistake is to immediately remove a patient from a doctor's care, after this doctor has supplied the patient with emergency medical care, which may have been life-saving. This summary

dismissal creates friction, especially if the patient had asked for this doctor, or has already learned to trust him (doctor-patient relationship). Where both the employer (or his carrier) and the worker (patient) desire another doctor, this is supplied through the code of ethics, even if another doctor supplied emergency medical care when the patient was unable to make request. There should be no hesitation in requesting qualifications since even the general practitioner may have unusually good training in traumatic medicine. There should be a valid reason for change of physician (unless the doctor-patient relationship is endangered). If the reason is financial only, eventually it will make it more difficult for the employer. Particularly is this true where the qualifications of the two doctors are of similar calibre. Obviously, at times it is preferable to have more than one doctor treating the patient.

In workmen's compensation law, the doctor must evaluate the permanent partial disability which a patient has sustained from injury (or certain occupational hazards). This does require special training and experience. However, even special training does not make disability evaluation a mathematical formula, with precision and exactness. The doctor must distinguish between temporary total disability (or partial) and permanent disability. In all severe injuries, the temporary disability is total, even though the patient might be able to do some work. The attempt to return to the best possible condition after serious injury is an all time proposition, even though the doctor does start rehabilitation right from the beginning of treatment. In the laws of Belgium, Bulgaria, France, India, Italy, Netherlands, New South Wales, New York, New Zealand, Norway, Ontario, Rumania, Sweden, Switzerland, and Uruguay, the almost universal starting point for determining the commencement of permanent disability is the date when treatment ceases to effect any further improvement. It is the same in Kansas. Any attempt to determine permanent disability before such maximum benefit has been achieved is highly conjectural, and not accurate.

Physiological Factors to Consider

Evaluation of permanent disability in the extremities is not too difficult, but still cannot be made with exactness, of a precise nature. There are many methods, some of them quite complicated. One of the oldest and simplest is that of Dr. Henry H. Kessler. In the upper extremity, three physiological factors are taken into consideration:

1. Motion of joints (measurable).
2. Strength of muscles (measurable).
3. Coordination (estimation).

Motion of the joint and the strength of certain muscles or muscle groups are measurable, and should be the same with all examiners. In the case of coordination, much depends upon the human characteristics of the examiner. The more the experience, the greater will be the accuracy (in spite of all training), but never will there be a precision formula. Further, the upper extremity is divided into arm, forearm, and hand radicals. In the case of the hand, some consider the functions of (1) Hook, (2) Ring, (3) Forceps, and (4) Pliers actions, others will consider the hand as a whole. To these measurements, the doctor must add the factors of pain, and nervous instability. Even in the upper extremity, it would be rare for two examiners to come up with identically the same rating of permanent disability.

In the lower extremity, these same physiological factors apply: stability, or weight bearing, has the same relation and importance that prehension has in the upper extremity (Kessler). This stability is not as accurately measured as is range of motion or strength of muscle action. Again there is a variability in final determination by independent appraisals—although the difference is not so great. The more complicated the system used and the more numerous the attributes considered, the greater will this variation become.

Body Disability

However, when one comes to body disability, that is, the body as a whole, then the problem becomes infinitely more complicated. The more certain an examiner becomes, the more likely he will be wrong. Such figures as 1 per cent, 2 per cent, 2.5 per cent are dangerous, indeed. It is much better to use a range, for example, 0-5 per cent, and allow the procedure of arbitration to achieve a final settlement figure. That is the function of a hearing. Dr. Earl D. McBride, an authority and lecturer on disability evaluation, and the author of one of the finest books on the subject, sent out a questionnaire to "specialists" all through the United States regarding body disability. The tremendous variation in the estimates proved that this was not an exact and precise science, but rather it was an "art" as well as a "science" and each individual case had to be considered on its own merits. Lectures and books cannot replace "experience," although they lay an excellent foundation for experience. Experience remains the greatest of all teachers. There is no average. This is a dream of the past, this is the desire of the bureaucrat, sitting on a swivel chair. The best estimates present a range, as for example, 0-5 per cent, or 5-10 per cent, or 10-15 per cent. The more completely a case is worked up (using the thorough history and physical examination as the mainstay, and laboratory procedures as adjuncts), the more likely the estimate will be the correct one. In this, the doctor should have some knowledge of

the acts performed in the particular occupation of the patient; if he does not know, he should ask, or observe the workman in action. The permanent disability should be related to the occupation of the patient. This requires training and experience.

The fee basis is based upon figures which date back years ago, when an attempt was made to make this a precise science with mathematical formulae. This is a failure. In a complicated case, for example, it may take two to three hours, or even longer, to complete the examination of the patient. Yet the same fee ($6.00 for the first call, or $15.00 for consultation) is requested by the employer. The famous physician, Sir William Osler, once stated that more mistakes are made by "not looking for than by not knowing about." Much revision is necessary. However, the doctor has, at all times, the right to present claim for services rendered at the hearing set by the commissioner.

Commissioner's Ruling

The ruling made by the commissioner at this hearing is very important to both the workman and the doctor. The workman is so protected by the law that regardless of whether the doctor did or did not know that the patient was covered by the workmen's compensation law, there is no means at all in which the doctor can charge the patient for services rendered (the portion covered by the law). On the other hand, the medical profession has a means for protection of such fees as are covered by the law. This protection is afforded by the commissioner through the medium of a hearing, and an award. These fees are laid down by law, and offer no complications, except under certain extenuating circumstances—wherein, because of inability to pro-rate, the maximum in the first section of 44-510 is exhausted; or where, because of proration, the fees are lower than in similar injuries sustained by individuals of a "like standard of living."

It is obvious that the law does not state that the doctor cannot collect from either the third party or the patient. If the workman is not covered by the law, then the workman must pay the doctor's charges (and not the employer), for all services. If the commissioner would rule that the patient was not under compensation for a period during which the doctor rendered services, then the doctor cannot charge the workman for services rendered during this period. Nowhere in the wording of the law, nor in its intent, nor in precedent, is there any provision for compensation law to withhold the right of the doctor to charge for services rendered without at the same time protecting him for its coverage (third party).

The workman should be certain of his "settlement" before accepting final payment. Now and then, the employer (or his carrier) will make settlement with a clause "subject to determination of the reasonableness of fees." This is a form of coercion and intimidation of the patient's doctor. It makes the doctor wait for as long as 6-12 months for his fee, even if it fails to "pressure" the commissioner. The defendant lawyer will then purposely allow the maximum of time permissible for appeal to lapse, so that the workman can no longer be brought into the picture again. The ability of this lawyer to bargain with the workman was based also upon payment to the doctor. By purposely allowing enough time to elapse, the workman can no longer upset this settlement; it is done and accomplished. However, if such charges are upset, the doctor may be able to look to the patient for payment. This is the "rub," unless the workman has delayed in accepting the settlement check until all fees were taken care of, or were disallowed *at the time of the award.* Fortunately, these tactics are seldom used by the legal profession, BUT, it has been attempted.

Triple Alliance

There is a triple alliance if the law is to run smoothly, employer, employee, and doctor. In this, there must be better public relations. Public relations is the new look in our mode of living and adjusting to each other, in these grand United States of America. The employer must realize that workmen's compensation law is here to stay, for the betterment and protection of the workman. Indeed, Kessler states:

> "Since the advent of Social Security in the form of unemployment and old age insurance, America is being gradually adjusted to the principle of social insurance. By this insurance principle it is anticipated that all hazards of life, accident, sickness, unemployment, and old age, will lose the intensity of their effects by a compulsory plan of saving. Workmen's compensation has never been considered as social insurance, yet it is the forerunner of this type of social scheme for mitigating the economic ravages of accident."

The employer must lose the old concept that it is a dole or a handout (and as such he should have the control). It is the opposite. It is an inalienable right possessed by the workman. These social reforms will do much to combat the pernicious and underhand principles of "world communism," and it is to the advantage of the employer to enhance this practice as good public relations. As soon as the employer realizes this "new look" in employer-employee relationship, the insurance carrier will fall in line. At times, the insurance carrier may refuse to supply all that the employer may have promised, but it is the employer who gets the blame. This does not mean to give up the right to protect oneself. However, the

major principle involved is protection for the workman. It is just as much a part of the cost of production as the property tax, the sales tax, or the corporation tax.

Doctors Too Must Cooperate

The willingness of the medical profession to sacrifice many of its rights and privileges in order that the workmen's compensation law may run smoothly is commendable, indeed. The more practical rearrangement of the members of the profession, the better acknowledgment of qualifications (and this applies to general practitioners as well as specialists), enhances and multiplies the good which can come from proper utilization of all sources for the betterment of the lot of the workman. This eliminates all monopolistic tendencies, and prevents introduction of cut-rate prices. The old adage "you get what you pay for" is as true in the practice of medicine as anywhere else.

Lack of "conformity" displays honesty and integrity and independence of thought. Conformity is not a prerequisite for the practice of good medicine. Indeed, it should not be in life. The foundation for the development of this country was based on the ability of the "pioneers" not to conform, but to establish an honest and free mode of living. This will explain to the public why appellations of "plaintiff doctor" or "company doctor" are attempts to cloak ignorance of the law—otherwise, reliance would be made upon the integrity and power of the law. The medical profession has done much to clarify these situations, even to the extent of self-imposed regulations. There has been a complete divorcing of economics from ethics. There are essentially two different groups of doctors, with gradations in between, and this is forthrightly acknowledged.

The legal profession has demonstrated honesty and integrity in the handling of workmen's compensation cases. Their code of ethics differs from that of the medical profession. The doctor must proceed on the basis that what is right is justified—even if this means disagreement with a fellow colleague. The lawyer proceeds on the basis that "his client is justified," regardless of what his private opinion may or may not be. Otherwise, he would not accept the case. This will explain why his mode of approach differs depending upon which side of the fence he is on. Certain members of the legal profession need clarification as to the difference between a poor result and malpractice. No doctor guarantees "cure." All severe injuries result in disability to greater or lesser extent. An operation may be performed to exactness and perfection and yet the functional result of the operation may be a failure. The human body is not a machine like an automobile. A "new part" cannot be substituted for the damaged one. "Negligence" constitutes "malpractice"; not a "poor result," nor the presence of "disability."

Doctor-Patient Relationship Prime Concern

The workman is the third party in this triple alliance. He is *the patient,* as far as the doctor is concerned. The doctor-patient relationship is the major concept of the medical profession and the backbone of its entire practice, regardless of economic pressure. The workman is the one to be protected. He does not have the financial backing, the corps of legal experts, the power and influence of the employer, *but* he is the patient. Seldom, indeed, does one encounter a frank malingerer (a malingerer means an individual who feigns illness or pain for material gain). The vast majority of injured workmen present their complaints with honesty and integrity; they want to return to work at the soonest possible moment. No matter what the compensation, it does not indemnify them for their actual losses; no matter what the settlement, it does not give them value for the actual pain and suffering and disability. Compensation law is a protective device and not an indemnifying agent.

628 Mills Building
Topeka, Kansas

Hospitals and other institutions made a slight gain last year in the never-ending struggle against fire, a report from the National Fire Prevention Association indicates.

The number of fires in hospital and other institutional buildings in 1958 totalled 1,600, down 100 from the previous year.

Overall, the nation's loss to fire last year came to a total of almost $1,279,000,000, with nearly 2,000,000 individual fires responsible for the destruction. Both figures are lower than those for the previous year, but the drop was only fractional.

Numberwise, homes were hardest hit, according to the annual analysis compiled by the NFPA Fire Record Department. Fire destroyed or damaged 558,000 at a cost of about $309,000,000. Both totals are new highs.

Principal causes of fires in buildings of all types—which the National Fire Prevention Association declares are almost all avoidable—were defective heating and cooking equipment, and careless smoking.

Excitation on Ganglion Cells

A Cytological and Histochemical Study of the Effects of Stimulation and Drugs on the Celiac Ganglion of the Cat

JAMES L. HALL, Ph.D., *and* **RONALD G. PALMER,** *Lawrence*

Changes in the metabolic activity of an isolated celiac ganglion are demonstrated by conventional histochemical methods and the toluidine blue method.

A depletion of RNA was elicited by faradic stimulation of the splanchnic nerve, no change in the DNA content of the neurons was noted. A moderate change in glycogen and a severe depletion of alkaline phosphatase was observed.

Previous to stimulation the neurons in the ganglion stained blue with toluidine blue. After stimulation, the neurons stained green. Metachromasia was observed in the neurons following intravenous atropine or hexamethonium. Ergonovine injections produced no demonstrable effects.

We feel that the color change from blue to green is apparently due to a depletion of RNA in the neurons.

THERE ARE NUMEROUS reports in the literature concerning the effects of excitation on autonomic ganglion cells; Hodge, 1888, 1889, 1892, 1894; Vas, 1892; Lambert, 1893; Lugaro, 1895; Nissl, 1896; Ingersoll, 1934, describe in great detail the morphological changes in the neurons. Hamaty and Truex ('54), in their work on the intracardiac ganglia, observed morphological changes persisting for months after they had stimulated the vagus nerve. The celiac ganglion itself has been well described both grossly (Kiss and Ballon, 1939) and microscopically (Ingersoll, '34).

Observations about the cytoplasmic chromidial substance of autonomic ganglion cells have been made by many authors making excitation studies. There is fairly good agreement that the chromidial substance is depleted by stimulation, but dissenting observations have been published (Kocher, 1916).

Sulkin and Kuntz ('50) have made a study of the histochemistry of the superior cervical ganglion. After stimulating for eight hours per day over a two to three day period, they observed a decrease in alkaline phosphatase activity in the neurons, and at the same time, an increase in alkaline phosphatase activity in the glial cells, which they associated with the proliferation previously observed to accompany ganglionic stimulation (Kuntz and Sulkin, '47). They observed a great variation in the PAS positive material in the ganglia of different cats, and a consistent increase in this material after stimulation. They found, by using malt diastase, that all the PAS positive material in the ganglia was glycogen, and they showed that mucopolysaccharides are found in the ganglion cells only of senile subjects (Sulkin and Kuntz, '52).

Purpose

It has been shown that the staining properties of the superior cervical ganglion with respect to toluidine blue can be altered by stimulation and by administering drugs to the animal (Richins and Hall, 1958), although the chemical basis for this alteration has never been demonstrated. Our objective is to extend this study to the celiac ganglion, and to gain some insight into the chemical significance of the altered properties of the ganglion by using some common histochemical techniques.

Materials and Methods

In this study, we used eleven cats of both sexes and weighing between three and eight and one-half pounds. None of these animals was used more than once. Sodium pentobarbital was used to anesthetize the animals. A Hodge-Cambert ECT stimulator was used for some of the experiments and a Grass stimulator for others. In each experiment the stimulation used was twenty shocks per second at a potential of 0.4 volts, with a duration of ten milliseconds and for a period of about three hours. After the adrenal veins had been ligated, and the celiac ganglia separated and isolated the thoracic splanchnic nerves of one celiac ganglion were stimulated preganglionically,

Department of Anatomy, University of Kansas School of Medicine, Lawrence, Kansas.
Mr. Palmer is a third year medical student.

TABLE 1

RESULTS OF HISTOCHEMICAL TECHNIQUES IN CELIAC GANGLION ELICITED BY STIMULATION OF THE SPLANCHNIC NERVE

Technique Used	*Results*
Feulgen Nucleal (DNA)	No depletion upon stimulation.
Methyl Green Stain (RNA)	Large depletion upon stimulation.
Periodic Acid-Schiff (glycogen)	Moderate depletion upon stimulation.
Alkaline Phosphatase	Noticeable depletion upon stimulation.

and in every experiment the stimulated and unstimulated ganglia were fixed, imbedded in paraffin and sectioned at 12 microns.

The celiac ganglia from an animal under the influence of no drug other than the anesthetic were used as a control in the study of toluidine blue staining reactions. All the tissues to be stained with toluidine blue were fixed in four per cent aqueous lead subacetate. The following dosages of drugs in dilute aqueous solution were injected into the right femoral vein of the experimental animals:

Drug	*Milligrams/Kg Body Weight*
Ergonovine maleate	0.00046
Atropine sulfate	0.00049
Hexamethonium chloride	0.002
Neostigmine methylsulfate	0.00044

The ergot alkaloid, ergonovine, which was used in this study, differs from that used by Richins and Hall in their investigation. Like the amino acid alkaloids used in the latter study, ergonovine shows a slight degree of vasoconstrictor activity (Goodman and Gilman, 1955). With respect to adrenergic blockade, however, ergonovine's inactivity contrasts sharply with the action of the amino acid alkaloids of ergotoxine. Therefore, any similarities between the two studies must be due to the vasoconstrictor activity.

The main action of atropine sulfate is to block the muscarinic effects of acetylcholine by raising the threshold of the effector organs to this neurohumor (Goodman and Gilman, 1955). In doses as small as 0.5 mgm/Kgm of body weight, however, atropine has been shown also to abolish postganglionic potentials of sympathetic ganglia (Marazzi, 1939).

Hexamethonium elevates the threshold for acetylcholine. It has an effect on autonomic ganglia, although it affects some more than others.

The action of neostigmine on the celiac ganglion is like that of nicotine; it stimulates in small doses and depresses in large doses. Both of these phases of neostigmine's action are due to the same phenomenon: The inhibition of cholinesterase. A low (stimulatory) concentration of the drug allows a sufficient accumulation of acetycholine to repeatedly depolarize the post-ganglionic neuron, while a higher (depressant) concentration allows enough for continuous depolarization. In both cases the neuron must increase its metabolic activity to maintain ionic gradients across the membrane.

In the histochemical studies no drugs were used. For the periodic acid-Schiff reagent, Pearse's technique was used after fixation in lead subacetate for about 24 hours. For the RNA stain, Kose's fixative was used, followed by Lillie's method for the methyl green pyronin stain. For DNA localization, Carnoy's fixative was followed by the Fuelgen nucleal reaction. For the detection of alkaline phosphatase, the tissue was fixed in cold, 10 per cent formaldehyde, and Lillie's method was then used.

TABLE 2

RESULTS OF TOLUIDINE BLUE STAINING AND DRUG ADMINISTRATION

			Drugs			
	NON-STIMULATED CONTROL	STIMULATED	ERGONOVINE	ATROPINE CHOLINERGIC DEPRESSOR	HEXAMETHONIUM	NEOSTIGMINE
Celiac ganglion nerve cells	Blue	Green	Blue	Green-Lavender	Green-Lavender	Green-Purple
Excessive discharging of nerve cells	——	Present	——	——	——	Present
Elevated threshold to ACh	——	——	——	Present	Present	——
Elevated concentration of ChE	——	Present	——	——	——	Present
Inhibition of ChE	——	——	——	——	——	Present

Results

The control ganglia stained with toluidine blue showed a loss of metachromasia in some neurons, but not in others. In the animals drugged with ergonovine, the cytoplasm stained blue to lavender apparently decreasing in intensity with stimulation. The ganglia from the animals drugged with atropine had some dark green neurons and some very darkly staining lavender blue neurons. The animals injected with hexamethonium had turquoise neurons which stained darker with stimulation, and which had bright green nucleoli. The animals injected with neostigmine showed green to purple neurons, the purple ones being more prominent after stimulation. The purple neurons had large, round, black dots in their nuclei.

In the histochemical studies, the ganglia were found to be quite PAS positive, becoming somewhat depleted by stimulation. Depletion was especially apparent around the nuclei. The RNA stain demonstrated a remarkable depletion of this substance by stimulation. The Feulgen nucleal reaction showed a classical picture of distribution of DNA, with no apparent differences due to the stimulation. The alkaline phosphatase reaction showed a depletion of this substance brought about by stimulation.

Discussion

The green color occurs in those neurons which have an elevated threshold to acetylcholine and in those which are subject to larger than normal amounts of acetylcholine. Neostigmine causes an elevated concentration of acetylcholine by the inhibition of cholinesterase. In the stimulated control ganglion, the concentration of acetylcholine is elevated by preganglionic stimulation. With hexamethonium and, to a lesser extent, atropine, the threshold to acetylcholine is elevated. These results are summarized in Table 2. The common factor here is the unusual dispensation of acetylcholine. It is not clear why this causes a green color, nor is it apparent why this effect is not seen in the stimulated ganglia of animals drugged with ergonovine.

The blue color disappears with activity, except in those animals drugged with ergonovine. Even in these cases there seems to be a diminution of the blue color with stimulation, suggesting that the blue color may be due to a component of RNA or glycogen, for reasons to be discussed below.

The cause of the purple color cannot be definitely established by the results of this investigation, but the large numbers of blue neurons in the stimulated, neostigmine drugged ganglia suggest that the color is due to an exhaustion or necrosis phenomenon.

Contrary to the findings of Sulkin and Kuntz ('50) in their study of the superior cervical ganglion, it was found that the ganglion cells, which were quite PAS positive to begin with, became depleted in glycogen content upon stimulation. We also found a depletion of RNA, as did Sulkin and Kuntz. As was mentioned above, it is believed that this depletion is correlated with the loss of blue color in the ganglion cells. We believe that RNA is the substance most likely to be responsible for this color loss, since the percentage of depletion of this substance is greater by far than that of glycogen. Although there was also a depletion of alkaline phosphatase with stimulation, the enzyme is present only in small quantities, and, since its action is specific, it probably does not act upon the stains. The fact that the DNA remains constant occasions no surprise, since the amount of chromatin in a cell is determined genetically, and not by environmental factors.

Department of Anatomy
University of Kansas School of Medicine
Lawrence, Kansas

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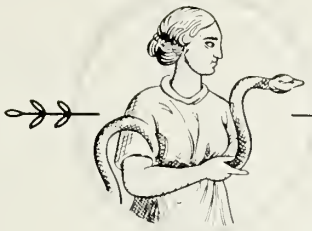


Medical HISTORY

Arthur Conan Doyle

Doctor and Writer (1859-1930)

C. FREDERICK KITTLE, M.D., ***Kansas City***

One hundred years ago—on May 22 to be exact—Arthur Conan Doyle, the creator of Sherlock Holmes, was born.

Irish by ancestry, Scottish by birth, and English by election, Doyle began life in near poverty in a small flat in Edinburgh. His grandfather, John Doyle, and three of his uncles distinguished themselves as artists in the field of political caricaturism. Although born in the Catholic faith and reared in Catholic schools, Doyle declined the offer of free tuition if he would dedicate himself to the Church. Chiefly because of his mother's suggestion he decided to become a doctor. Edinburgh was a famous medical school at this time and he would have the advantage of being at home while attending there. He applied and was accepted. His master at prep school called him up the last day of the term and made the following declaration:

> "Doyle, I have known you now for seven years, and I know you thoroughly. I am going to say something which you will remember in after-life. Doyle, you will never come to any good."

Doyle did remember and unquestionably proved his previous head-master wrong many times over. He entered the University of Edinburgh in October 1876 and received his bachelor of medicine degree in August 1881—only three months past his 22nd birthday.

Many of the future characters to be found in his literary works resulted from contacts with his professors and fellow students at Edinburgh. It was here in the out-patient department that he met Dr. Joseph Bell, surgeon to the Edinburgh infirmary, and prototype of Sherlock Holmes. The diagnostic acumen of Bell impressed the medical student Doyle tremendously. Repeatedly Bell would demonstrate with piercing keenness his powers of observation and his lightning deduction in the solution of diagnostic problems. One instance particularly impressed Doyle:

Figure 1. Arthur Conan Doyle, a photograph taken during his first trip to the United States in 1923.

Abridged from a talk given at the Hixon Hour, the Clendening Library. From the Department of Surgery, The University of Kansas Medical Center, Kansas City, Kansas.

"Well, my man, you've served in the army."
"Aye, sir."
"Not long discharged?"
"No, sir."
"A Highland regiment?"
"Aye, sir."
"A non-com. officer?"
"Aye, sir."
"Stationed at Barbados?"
"Aye, sir."

"You see, gentlemen," explained Bell to his students, "the man was a respectful man but did not remove his hat. They do not in the army, but he would have learned civilian ways had he been long discharged. He has an air of authority and he is obviously Scottish. As to Barbados, his complaint is elephantiasis, which is West Indian and not British."

Another outstanding personality at Edinburgh was his teacher of physics, Professor Rutherford, who, ". . . with his Assyrian beard, his prodigious voice, his enormous, and his singular manner . . . fascinated and awed us. I have endeavored to reproduce some of his peculiarities in the fictitious character of Professor Challenger."

At the University Doyle was an average student, stating that he was a "sixty per cent man at examinations." From the very first he was forced to supplement his meager finances by extra jobs. During his five years of medical school he worked as an unqualified assistant in the poorer quarters of Sheffield, the countryside of Shropshire, and lastly in the slums of Birmingham. It was in Birmingham, at the urging of a friend who undoubtedly recognized Doyle's literary talents, that he submitted an adventure yarn to *Chamber's Journal*. This tale, "The Mystery of Sasassa Valley," was based on an old Kaffir superstition of a demon with glowing eyes. These eyes when confronted by the hero proved to be diamonds in rock-salt. The story was accepted and Doyle received 3 guineas. This was his first publication!

While still in medical school a fellow student abruptly walked into his room and asked if he would care to go as a surgeon on a whaler to the Arctic Sea. Tempted by the adventure as well as its financial return, Doyle found himself two weeks later on the Hope, a 200-ton vessel which was to be his home for the next seven weeks. His Arctic experiences made a deep impression on him and he secured a wealth of material for future writings. As a direct result of the expedition, an unsigned short story in *Templebar* appeared, "The Captain of the Polestar."

He could not forget the fascination of the sea and soon after graduation in 1881 sailed as ship's surgeon on the *S. S. Mayumba* of the African Steam Navigation Company. It was a spirited voyage for he stopped at many ports along the west coast of Africa, contracted a tropical fever, and endured a ship's fire of eight days' duration on the return trip. After these four uncomfortable and miserable months he was glad to see England again.

On his return he entered general practice. The next few years of his life are best summarized in an autobiographical account called, "The Stark Munro Letters." This book tells his experiences in practice with a classmate from Edinburgh, a fantastic egomaniac, half-genius, half-charlatan, and thoroughly incorrigible. The character, in true life, George Budd, is named Cullingworth in the book. A delightful and humorous recollection of Doyle's trials and tribulations during this period, Doyle's account of Cullingworth's bid for notoriety to increase his medical practice is typical of the entire story. Doyle is talking to Cullingworth:

"My eyes happened to catch the medal which I had dropped lying upon the carpet. I lifted it up and looked at it. Printed upon it was—"Presented to James Cullingworth for gallantry in saving life. Jan. 1879."

"Hullo, Cullingworth," said I. "You never told me about this!"

He was off in an instant in his most extravagant style.

"What! the medal? Haven't you got one? I thought everyone had. You prefer to be select, I suppose. It was a little boy. You've no idea the trouble I had to get him in."

"Get him out, you mean."

"My dear chap, you don't understand! Anyone could get a child out. It's getting one in that's a bother. One deserves a medal for it. Then there are the witnesses, four shillings a day I had to pay them, and a quart of beer in the evenings. You see you can't pick up a child and carry it to the edge of a pier and throw it in. You'd have all sorts of complications with the parents. You must be patient and wait until you get a legitimate chance. I caught a quinsy walking up and down Avonmouth pier before I saw my opportunity. He was rather a stolid fat boy, and he was sitting on the very edge, fishing. I got the sole of my foot on to the small of his back, and shot him an incredible distance. I had some little difficulty in getting him out, for his fishing line got twice around my legs, but it all ended well, and the witnesses were as staunch as possible. The boy came up to thank me next day, and said that he was quite uninjured save for a bruise on the back. His parents always send me a brace of fowls every Christmas."

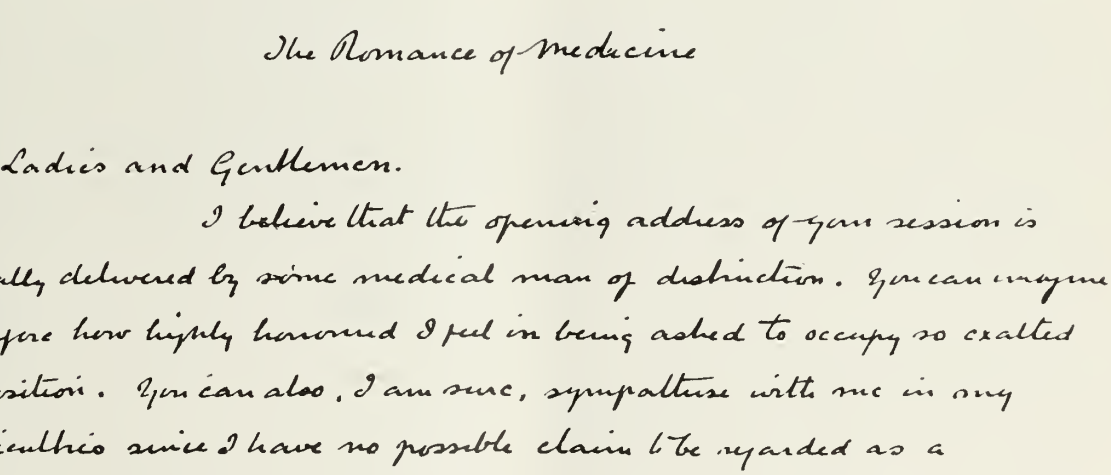
Dolye finally left Cullingworth (Budd in real life) and settled for independent practice in Southsea near Portsmouth. His clientele grew slowly and he spent most of his days cleaning his house, shopping and doing other simple household tasks. As he describes it:

"Month followed month and I picked up a patient here and a patient there until a nucleus of a little practice had been formed. Sometimes it was an accident, sometimes an emergency case, sometimes a newcomer to the town, or one who had quarreled with his doctor. I mixed with people so far as I could, but I learned that a brass plate alone will never attract, and people must see the human being that lies in wait behind it. Some of my tradespeople gave me their custom in return for mine, and mine was so small that I was likely to have the best of the bargain. There was a grocer that developed epileptic fits, which meant butter and tea for us. Poor fellow, he could never have realized the mixed feelings with which I received the news of a fresh outbreak. . . . It was a ghoulish compact, by which a fit to him meant butter and bacon to me, while a spell of health for him sent me back to dry bread and saveloys."

Gradually his practice increased probably because of the many contacts he developed socially. He lectured to clubs about many subjects, he played rugby and cricket, he bowled, debated in political meetings, publicly supported vivisection, and vociferously argued for vaccination. His practice never became really large and when he completed and sent in his first income tax report, it was returned with the terse comment: "Most unsatisfactory." Doyle promptly added, "I agree" and fired it back to the agent. An inspection of his ledgers by the officials supported both statements.

The years in Southsea were the most active medical part of his career. His only strictly medical writings appeared as brief notes in the *Lancet* and the *British Medical Journal*. There were three scientific articles, the first (1879) actually having been written while a student *(Brit. M. J.,* Sept. 20, 1879, p. 483). In it he described an experiment conducted on himself in which he took gradually increasing doses of gelseminum over a seven day period, listing his reactions and symptoms to each dose. The other two papers (1882 and 1884) are concerned with case reports, one suggesting a connection between malaria and leukemia *(Lancet,* March 25, 1882, p. 430), the other mentioning gout in three successive generations of the same family *(Lancet,* Nov. 29, 1884, p. 978-979).

His M.D. degree was granted by Edinburgh University in 1885 upon completion of a thesis "The Gouty Diathesis" and an examination.



The Romance of Medicine

Ladies and Gentlemen.

I believe that the opening address of your session is usually delivered by some medical man of distinction. You can imagine therefore how highly honoured I feel in being asked to occupy so exalted a position. You can also, I am sure, sympathise with me in my difficulties since I have no possible claim to be regarded as a successful medical man. An unkind chairman in America once remarked that ~~one of~~ the most sinister features of my career was that no living patient of mine had ever yet been seen. As a matter of fact I could point to a few survivors but I admit that they are not a numerous band. But though my actual practise of the profession was never either very profitable or very glorious I think I may claim that at least it was very varied, and that is!

Figure 2. First page of manuscript "The Romance of Medicine" now in author's possession, Kansas City. Note the unmedical, legible handwriting!

In 1885 Doyle married and with this greater responsibility began to devote more time to writing. In the next several years "Habakuk Jephson's Statement," "The Firm of Girdlestone," "The Great Keinplatz Experiment," "A Physiologist's Wife," and others were published. In 1886 that famous couple Sherlock Holmes and Dr. Watson were created, but it was not until the following year that "A Study in Scarlet" was published. Doyle received 25 pounds sterling for the complete copyright of this story. The famous detective's name is patterned after Oliver Wendell Holmes whom Doyle so greatly admired. The technique follows that of Edgar Allen Poe and his astonishing sleuth, Monsieur Dupin.

History next claimed Doyle's attention and he delved into the 17th century conflict between Catholicism and Protestantism. "Micah Clarke" emerged to be followed by other historical novels, "The White Company," "The Brigadier Gerard" series based on the French Revolution, and "Sir Nigel."

"Sign of Four" in which Holmes appears for the second time is the direct result of a dinner given by a representative of the publisher Lippincott for Doyle and the young, not-yet-famous Oscar Wilde. Because of this dinner Wilde wrote "The Picture of Dorian Gray" and Doyle "Sign of Four."

In 1890 Dr. Robert Koch of Berlin announced that he had discovered a cure for tuberculosis. Despite the success Doyle was now having with his medical practice and his writing he felt an "irresistible impulse" and a "great urge" to visit Berlin. He made this journey and came to the conclusion as expressed in a letter to the *Daily Telegraph* that "the whole thing was experimental and premature." On his way home from Berlin he talked on the train with Sir Malcolm Morris who convinced him that he was wasting his time in general practice and that he should specialize. He elected ophthalmology.

In 1891 he reached Vienna and spent four months attending eye lectures at the Krankenhaus. He returned to London and established his offices on Devonshire Place, near the fashionable Harley Street physicians. After long hours, weeks, and months of waiting for even the first patient to appear he abandoned himself completely to writing.

> "My rooms in Devonshire Place," he said, "consisted of a waiting-room and a consulting-room, where I waited in the consulting-room and no one waited in the waiting-room."

The Sherlock Holmes stories with their famous narrator, Dr. Watson, were now becoming popular. Doyle signed a contract with George Newnes, editor of the *Strand* magazine for a series of these. Who could resist them?

> "In the dim light of the lamp I saw him sitting there, an old briar pipe between his lips, his eyes fixed vacantly upon the corner of the ceiling, the blue smoke curling up from him, silent, motionless, with the light shining upon his strong-set aquiline features." (The Man With the Twisted Lip.)

It is no secret that Doyle did not think highly of his Sherlock Holmes stories, preferring his historical efforts to those of the detective. He resolved to kill Sherlock Holmes and abolish the ever-increasing public clamor for more of these adventures. He did so and as he wrote to his mother:

> "All is very well down here. I am in the middle of the last Holmes story, after which the gentleman vanishes, never to return. I am weary of his name!"

And thus, Professor Moriarty waited, the precipitous falls of Reichenbach beckoned, and Sherlock Holmes was dead—until public clamor demanded a resurrection.

Our own Logan Clendening was an avid reader of Sherlock Holmes and no less addicted than millions of others. Clendening's interest is testified by his account of the arrival of Sherlock Holmes in Heaven:

> "Sherlock Holmes is dead. At the age of eighty he passed away quietly in his sleep. And at once he ascended to Heaven.
>
> The arrival of few recent immigrants to the celestial streets has caused so much excitement. Only Napoleon's appearance in Hell is said to have equaled the great detective's appearance. In spite of the heavy fog which rolled in from the Jordan, Holmes was immediately bowled in a hansom to audience with the Divine Presence. After the customary exchange of amenities, Jehovah said:
>
> 'Mr. Holmes, we, too, have our problems. Adam and Eve are missing. Have been, 's a matter of fact, for nearly two aeons. They used to be quite an attraction to visitors and we would like to commission you to discover them.'
>
> Holmes looked thoughtful for a moment.
>
> 'We fear that their appearance when last seen would furnish no clue,' continued Jehovah. 'A man is bound to change in two aeons.'
>
> Holmes held up his long, thin hand. 'Good old Watson,' he replied. 'Surely they must differ from the rest of the race.'
>
> 'Well,' mused God, 'it was given out that they were Jews. I don't want to hurt Professor Einstein's feelings, but 's a matter of fact they were polyglots. Their children resembled them very closely, however.'
>
> 'A moment,' interrupted Holmes. 'With luck —could you make a pretty general announcement that a contest between an immovable body and an irresistible force would be staged in that large field at the end of the street—Lord's, I presume it is?'
>
> The announcement was made and soon the

streets were filled with a slowly moving crowd. Holmes stood idly on the divine portico watching them.

Suddenly he darted out into the crowd and seized a patriarch and his whimpering old mate; he brought them to the Divine presence.

'It is,' asserted Deity. 'Adam, you have been giving us a great deal of anxiety. But, Mr. Holmes, tell me how you found them.'

'Elementary, my dear God,' said Sherlock Holmes, 'they have no navels.' "

Doyle's medical education and his medical experiences are soon appreciated by even the briefest perusal of his writings, particularly the Sherlock Holmes tales. For example, there are many descriptions of heart disease. In the "Sign of Four" Major Sholto is dying in heart failure—left ventricular failure, probably secondary to hypertension, and orthopnea is rightly emphasized as a leading sympton:

"When we entered his room he was propped up with pillows and breathing heavily . . . grasping our hands he made a remarkable statement in a voice broken as much by emotion as by pain. . . . At this instant a horrible change came over his expression . . . his eyes stared wildly, his jaw dropped . . . his pulse ceased to beat."

Another is the graphic account of an aortic aneurysm. As Jefferson Hope is arrested (Sign of Four) he remarked that he might not live for the trial:

"It isn't suicide I am thinking of; put your hand on my chest," he said. "Watson did so, and at once became conscious of an extraordinary throbbing and commotion inside. The walls of his chest seemed to quiver as a frail building would when some powerful engine was at work. In the silence of the room he could hear a dull humming and buzzing noise which proceeded from the same source."

"Why," cried Watson, "you have an aortic aneurysm."

"That's what they call it," he said frankly. "I went to the doctor last week, and he told me it was bound to burst before many days passed."

Similar examples could be cited about other types of heart disease, and it is doubtful if the works of any other novelist contain descriptions of extrasystoles, of edema, of angina pectoris, of aneurysm, or rheumatic valvular disease, and of left ventricular failure with orthopnea with such careful adherence to medical detail. Diseases of the lungs, the nervous system, tropical diseases, anatomy, chemistry, and pharmacology—all are intermingled in an unusually accurate manner to enhance the reader's interest.

One of the most interesting of his medical writings is a talk given to the entering medical class at St. Mary's Hospital in 1910. Entitled "The Romance of Medicine" Doyle begins:

"I believe that the opening address of your session is usually delivered by some medical man of distinction. You can imagine therefore how highly honored I feel in being asked to occupy so exalted a position. You can also, I am sure, sympathize with me in my difficulties since I have no possible claim to be regarded as a successful medical man. An unkind chairman in America once remarked that the most sinister feature of my career was that no *living* patient of mine had ever yet been seen."

He proceeds to say that a medical training is a most valuable and worthwhile background for any profession. He then refers to the undue materialism of the period when he received his education, and advises:

"And besides an undue materialism there is another danger upon which I would warn you. It is intellectual priggishness. There is a type of young medical man who has all diseases nicely tabulated, and all his remedies nicely tabulated, the one exactly fitting the other—you produce the symptoms and he will produce the tabloid—who really is a very raw product. Life may turn him into a more finished article. Each generation has thought it knew all about it, each generation in turn discovered its limitations, and yet with invincible optimism each fresh lot still thinks that they really have got to the bottom of the matter. . . . As the philosopher said, 'We are but children picking up pebbles on the shores of an illimitable ocean.'

"There is another fact which life will teach—the value of kindliness and humanity as well as of knowledge. This is exactly the point the intellectual prig has missed. A strong and kindly personality is as valuable an asset as actual learning in a medical man."

Of Doyle's life there is much we have not covered. He served his country during the Boer War as senior physician in the Langman Field Hospital. The atrocities inflicted on the people of the Congo so impressed him that he wrote several pamphlets—published at his own expense—to arouse public sympathy for the British in this conflict. The profits from these he gave to the University of Edinburgh to establish a scholarship fund for the needy students from South Africa. In 1902 he received the honor of a knighthood.

With the onset of World War I he quickly formed the first volunteer force in his village in Sussex. He later visited the French and Italian Fronts and his report on this visit did much to hearten the anxious people in those days. Later he wrote the official six volume history of the British campaign in this war, a most readable but unfortunately neglected account.

His science fiction with Professor Challenger, "The Lost World," "The Poison Bat," "The Maracot

Deep," etc. compare with the best of H. G. Wells and Jules Verne. He championed the underprivileged as evidenced by his real-life solution of the miscarriage of justice in the conviction of the innocent Edalji and of Oscar Slater.

Throughout life he distinguished himself in the world of sports. He played soccer to the age of 44, and first-class cricket to the age of 55. His skill at billiards was great. Golf, tennis, cycling, aviation and motoring also shared his affections. He introduced skiing into Switzerland and was an early advocate of miniature rifle-ranges. His knowledge of boxing, gained at Edinburgh, not only served him in good stead on several occasions personally but is shown in his novels "Rodney Stone" and "The Croxley Master."

The last ten years of his life he devoted to the greatest mystery of all. The faith in which he had been born gave rise to scientific agnosticism and finally to a deeply religious outlook on life. He studied psychical phenomena extensively and with earnest conviction and tireless energy preached his belief in spiritualism. He wrote many books and pamphlets on his investigations and the evidence for spiritualism, and travelled widely in connection with these pursuits—thereby hastening his death by the physical strain of these activities.

Arthur Conan Doyle can not be pictured as a single person. He was a combination of many different entities blended into one: the physician, the sportsman, the champion of the undertrod, the historian, the orator, and the author. A man of amazing versatility and boundless energy, he died of heart disease on July 7, 1930. On his tombstone is engraved his name, his birthdate, and four words:

STEEL TRUE, BLADE STRAIGHT

and what more need be said.

Department of Surgery
University of Kansas Medical School
Kansas City, Kansas

Physician From Britain Says American M.D.s Work Harder

Asked to explain his remark about "two short and most enjoyable weeks as visiting physician to the Massachusetts General Hospital," Dr. J. F. Stokes of London says that he believes that physicians in the United States emphasize "the acquisition of medical knowledge, the search for truth." This acquisition is one of two main objectives for doctors, and British physicians apparently emphasize the second objective: ". . . the relief and prevention of suffering in patients who come under his care."

The American resident puts in more hours and more work per day than his British counterpart. There is great hurry and drive among medical men in the United States, but the physician going into clinical practice should strive as much for breadth as for depth in education, while the laboratory career in its early stage does not demand as much breadth. However, in view of the fact that laboratory men seem to hold most of the most important positions, the young physician may become so inclined away from seemingly unrewarding clinical work that one may ask whether "the day of the clinician in American medicine is over." On the other hand, the established British clinicians must make sure to submit themselves to criticism and promote original thought and must be "actively protected from decay."

The task of the clinician is harder than ever; he is expected to and should be informed in an increasing number of corollary disciplines. But he might be helped if he didn't have to spend so much time in answering the "demand for printed evidence." Perhaps all journals might agree "to stop publication for six months every five years" in order to afford "time for reflection and time to decide whether there is room for both pointillisme and polysaccharides, and coproporphyrins as well as Copernicus, and whether Emile Zola's realism and the Zollinger-Ellison syndrome are mutually exclusive phenomena."

Others have probably observed American medicine for a longer period, says Dr. Stokes, commenting on the limitation of his experience. Referring to his comments, he adds that "conclusions drawn from small samples are notoriously unreliable." *(New England J. Med. 260:69, January 8, 1959.)*

Student
THESIS

Loewi's Test for Acute Pancreatitis

E. RULE OLSON, M.D., ***San Francisco***

SINCE PANCREATITIS WAS first recognized as a clinical entity by Fitz in 1881 it has proven to be a versatile masquerader. According to Backus and Roth "a definite diagnosis of acute pancreatitis is not possible by the bedside examination alone, because symptoms follow no consistent pattern. Abdominal pain and tenderness along with abdominal muscle spasm and vomiting may suggest the diagnosis, but acute pancreatitis may simulate a variety of acute medical and surgical emergencies.

"The onset is usually sudden, severe, steady pain; however, the pain may be crampy and intermittent, or dull and ill defined. The pain is frequently in the epigastrium but the initial pain may arise in the lower chest. Radiation of pain may take place in any direction, but more commonly it spreads from the epigastrium toward the left into the area of the first and second lumbar vertebra."

Wakefield is somewhat more specific as he believes the pain is severe and steady, "rarely colicky," originating less than half of the time in the epigastrium, the rest originating as generalized abdominal and flank pain or occasionally as chest and shoulder pain. He states the patient may be found in a jack-knife position. Vomiting often occurs after the onset of pain and may continue in spite of an empty stomach. The pulse is unpredictable but the patient may appear to be in shock. Wakefield also relies on demonstration of an abdominal mass (one third of the cases) and a distended epigastrium in contrast to a flat lower abdomen.

Other clinical signs include the Gray-Turner sign and Cullen's sign. The first of these is ecchymosis of the flanks and the latter similar discoloration of the subumbilical region. Both are rare and appear three to four days after the onset of illness.

Laboratory Aids

Of the multitude of laboratory aids the following have received most attention. X-ray may show a distended "sentinel loop" of jejunum, and later the transverse colon and stomach may show distention. The Cammidge Reaction was thought to be pathognomonic of acute pancreatitis but proved to be quite non-specific.* The diatase urine level, a difficult, none too reliable laboratory procedure has given way to the lipase and amylase blood values of present day use. Lipase and amylase blood levels have been well standardized and although their determination requires a certain length of time and a trained technician they are considered almost as diagnostic as a pathologic section of the gland.

Acute pancreatitis may simulate acute alcoholic gastritis, acute appendicitis, acute cholecystitis, acute

This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be best by the faculty at the school. Dr. Olson is now at the Letterman Army Hospital, San Francisco, California.

* Cammidge's Reaction: Boil albumin and glucose free urine with hydrochloric acid and after treatment with lead salts and the removal of these salts, heat with phenylhydrazin hydrochloride and examine sediment for the presence of rosettes of yellow, needle-like crystals (osazone crystals).

diverticulitis, peptic ulcer, acute small bowel obstruction, generalized peritonitis, perforated viscus, basal pneumonitis, acute pericarditis, and acute myocardial infarction. The confusion with pneumonitis is further complicated by the not unusual presence of physical signs at, and recovery of fluid from, the left lung base in patients with acute pancreatitis. The cardiac possibilities may also be suggested by transitory ST segment and T wave changes due entirely to the pancreatic inflammation.

The changing of methods of treatment in the various causes of the acute abdomen has necessitated making a diagnosis. Acute pancreatitis was originally treated by surgical decompression and drainage. Since approximately 1934, medical treatment has been substituted and surgery even considered to be contraindicated in acute pancreatitis but the hazards of surgery for patients with acute pancreatitis have been discredited in a study of 76 cases by Lampson, *et al.* Many of the possible conditions mimicked are of the surgical emergency category. If surgery is detrimental to these patients a diagnosis is then even more important.

Adrenalin Mydriasis Test of Loewi

It is the point of this paper to discuss a bedside test for pancreatitis which, although it has been on the medical record some 50 years, is at present virtually unknown and certainly not understood. In 1908 Otto Loewi, the Nobel Prize winner for his investigations of cardiac innervation, proposed a test for pancreatic lesions, especially diabetes mellitus. It was his belief that the pancreas had an antagonistic effect on adrenalin and the sympathetic nervous system. As a measure of the hypersensitivity of the sympathetic system, Loewi proposed the following test: Using epinephrine 1:1000 solution, four drops are placed into the conjunctival sac of one eye of an animal. After approximately five minutes four more drops are added. The eye is observed for mydriasis over a period of from 20 to 60 minutes after the adrenalin instillation. A positive result is indicated by an increase in pupil size, often asymmetrically enlarged, as compared to the untreated control eye.*

*Epinephrine was shown to be a mydriatic agent shortly after its discovery. Radziejewski in 1898 first noted the effect of adrenalin on the human eye but could not produce mydriasis or change in accommodation in 500 normals selected at random using 10 per cent solution in the conjunctival sac. Boruttau in 1899 showed local blood vessel contraction but no changes in the iris by similar adrenal administration.

Clara Meltyer, *et al.* showed that removal of the superior cervical sympathetic ganglion made pupils sensitive to smaller amounts of epinephrine given parenterally. In 1906 she became the first to advocate the use of conjunctival epinephrine mydriasis as a diagnostic aid in human pathology. The test was used in patients suspected of having destruction of the superior cervical ganglion.

In order to prove his theory, Loewi designed his experiment as follows:

1. Instillation of adrenalin into the conjunctival sac of normal men, dogs, and cats had no influence on the pupillary dilatation.
2. After total extirpation of the pancreas in dogs and cats, these animals showed adrenalin mydriasis.
3. After operation to produce external drainage of all pancreatic secretion, adrenalin mydriasis was not produced.
4. In surgically produced pancreatic insufficiency (partial removal of pancreas) adrenalin mydriasis became positive after several months.
5. In 10 of 18 diabetes mellitus patients the adrenalin mydriasis test was positive.
6. One case of Basedow's disease gave a positive reaction.

The Test's Conclusions

From these findings Loewi drew some broad conclusions:

A. Hypersensitivity of the sympathetic nervous system is produced by removal or reduction of an internal secretion of the pancreas.

B. The high percentage of positive reactions in diabetics indicates a pancreatic insufficiency in this disease.

C. The positive reaction noted in Basedow's disease is probably due to increased stimulation of the sympathetic system by hyperthyroidism.

In summation of the test itself Loewi states:

"The positive reaction is characteristic of a pancreatic lesion, when not due to other easily diagnosed causes. When not present, it is not a proof of the non-pancreatic origin of the disease."

From Loewi's first publication to as late as 1952 numerous poorly documented opinions have been expressed about this adrenalin mydriatic test. As is true of all new procedures there were those who saw no clinical use in the test and some who attempted to read too much into it.

Bailey even tried to differentiate between peripancreatic disease and pancreatitis. In one case he observed "a positive reaction unlike the other positives." This case he diagnosed at operation as peripancreatic abscess. The "pseudo-Loewi reaction" as he called it showed not only dilatation of the pupil but also paralysis of the light reflex.

In the same year (1908) Loewi's findings were confirmed by Falta in whose observations positive reactions were also observed in lesions involving the peritoneum and in one case, the meninges.

Again in 1908 Schultz found the reaction to occur in normal animals with "relative ease and certainty" if light stimuli were absent or reduced. However, he

did not seem compelled to explain Loewi's results and seemed to feel his findings destroyed further use of the test. He showed that in normal man the reaction was positive in a dark room (the drugged pupil larger than the other) but that the test required longer than 148 minutes after epinephrine administration.

In 1909-10 there were suggestions of the usefulness of Loewi's tests in the diagnosis of acute pancreatitis in the American literature. Werzberg in 1911 reported no false positives in his experience (seemingly quite limited) and also reported two cases of pancreatitis with positive adrenalin mydriasis. Albu in the same year reported positive reactions with acute pancreatitis but found it so inconsistent in diabetes as to make it useless for the diagnosis of that disease.

Richard Cords' Works

The most careful, painstaking investigation of adrenalin mydriasis was published as a pamphlet in 1911 by Richard Cords. Although Cords was particularly interested in the mechanism of the test (to be discussed later) he did have contributions pertinent to this topic. For one, he showed clearly that diabetes *per se* is not a cause of adrenalin mydriasis. Blood sugar levels, severity, duration, or control of diabetes had no relation to whether the test was positive or negative. He was one of the first to point out the necessity of an intact cornea to prevent false positive tests. He reported a long series of case histories where patients with conjunctivitis, corneal cracks, ulcers, and other injury had positive Loewi's tests before, but not after, treatment to correct the eye lesions.

Carpi in 1913 stated that in his investigations Loewi's test gave such variable results as to be unreliable in the study of pancreatic insufficiency. His meaning of "pancreatic insufficiency" however seems to be synonymous with diabetes mellitus.

In 1913 Sladden reported in a series of two articles one of the few American investigations of Loewi's test.

In the first report, using a carefully standardized technique, 51 patients were examined. Eleven were positive and 40 were negative. In five of the eleven positives pancreatic disease was demonstrated by operation or post-mortem. In four, pancreatitis was the clinical impression as either the primary disease or as a complication. Of the other two, one had exophthalmic goiter and the other was shown not to have pancreatitis at operation. The latter case was cancer of the pylorus and the test had been positive only on admission and was negative thereafter. Of the 40 negative tests embracing many diseases (not necessarily acute abdomens) no pancreatic disease was proven or suspected.

By present day standards the author's criteria of diagnosis are not above question and his assumptions of "probably pancreatic disease" are not convincing. Most of the pancreatitis which was diagnosed was severe and chronic. This work, though valuable in 1913, cannot be considered reliable now.

From 1914 to 1930 Humphry, Waring and Giffiths, Moynehan, Chamberland, Hailey, Rowland, and Garrod all reported the usefulness of the epinephrine mydriatic test for pancreatitis. Of these seven articles only three included any actual figures of clinical trials and in these three only a total of eight patients were reported. All of the tested patients were believed to have pancreatitis with confirmation by autopsy (four), operation (three), or clinical judgment (one). On the other hand McNeill Love reported 51 cases of acute pancreatitis with only five having a positive Loew's reaction. This author failed to mention how many patients were shown to have a negative reaction and also did not clearly prove the diagnosis in all 51 cases. It is to be said, however, that this latter study probably includes less severe cases of pancreatitis.

Decker's series of 500 cases from surgical and medical wards of the West Pen Hospital was thought to indicate that Loewi's test was of doubtful diagnostic value. Of the 500 tested only 18 were found positive. Two had known primary and six had possible secondary pancreatic disease while two others had gall bladder disease. The test was negative in some with proven pancreatic disease. It is unfortunate that the report does not explain the kinds of "pancreatic disease" which gave the positive and negative results, and does not give the case histories of the false positives.

In 1951, Tseng, W. J. Wu, and C. K. Wu reported eight cases of "acute pancreatitis seen over a period of a year, diagnosed by elevation of serum amylase performed routinely on acute abdominal cases with upper abdominal pain." Loewi's test "was carried out in six of our patients with negative results in four and a positive result in two. . . . We have also obtained positive results in patients suffering from diseases totally unrelated to the pancreas."

Important Factors Not Considered

All reports thus far mentioned have failed to take into consideration at least two of three important factors. The most difficult of these to evaluate is the earlier mentioned condition of the cornea. This factor in itself, although important, could scarcely explain the multiple false positives and certainly none of the false negatives. It is of course important to know what medication the patient has been given. Morphine is often given acutely ill patients in severe pain, and this drug will block the test quite successfully. Cocaine also has been noted to cause difficulties

with the test. Cords, quoting Loewi, mentions increased pupilliary, blood vessel and bladder sensitivity to adrenalin given parenterally as well as positive Loewi's test in animals previously administered cocaine. Any series without a careful history excluding intake of these drugs is open to many errors.

The most recent clinical trial and probably the most reliable to date was published by Aladjem in 1952. Among 8,653 patients admitted to the surgical department of Rothschild Hospital, Haifa, Israel, during the six years prior to the publication, 16 cases of acute pancreatitis were diagnosed, of which three were traumatic. These figures show the one greatest inadequacy of this report. Aladjem states that "all cases showed severe hemorrhagic and necrotic pancreatitis. Doubtless there are milder forms of this disease, but these do not present to the hospital."

All cases of acute abdomen admitted to the department over a six year period were tested following Otto Loewi's suggested procedure. The results were as follows:

1. "Of 118 cases of acute cholecystitis-cholelithiasis proved operatively the test was positive in three. In each of these three we found stones in the common duct without any visible alteration in the pancreas.
2. "Of 46 cases of perforated peptic ulcer, proved surgically, the test was positive in two. Of these, one was a deeply located duodenal ulcer with escape of pancreatic juice into the free peritoneal cavity. In the second case there was no visible finding apart from the perforation.
3. "In 100 cases of acute appendicitis the test was always negative. Of 32 cases of intestinal obstruction the test was positive in one case of volvulus of the sigmoid.
4. "Of 21 cases of various acute abdominal conditions, among them some of ruptured spleen or liver, the test was positive in one case of retroperitoneal rupture of the duodenum. This case also showed escape of pancreatic juice into the free peritoneal cavity. We applied the mydriasis test also in non-acute conditions.
5. "We found that in 57 cases of Graves' Disease the test was always negative.
6. "In 246 operated cases of peptic ulcer the test was positive in three. In each of these three cases the ulcer had penetrated the pancreas.
7. "Of 16 cases of acute pancreatitis the test was applied in 15 and found positive in 13, in one it was not clear, and in one the pupil did not react to epinephrine because the patient had been given a large dose of morphium before being sent to the hospital."

Computing Chi Squares for comparison of acute pancreatitis with each of the five other acute abdominal categories the following are the results:

1. Acute pancreatitis and cholecystitis-cholelithiasis—$X^2 = 24.3$
2. Acute pancreatitis and perforated peptic ulcer—$X^2 = 39.6$
3. Acute pancreatitis and acute appendix—$X^2 = 97.6$
4. Acute pancreatitis and miscellaneous acute abdominal disease—$X^2 = 24.5$
5. Acute pancreatitis and intestinal obstruction—$X^2 = 33.8$
6. Acute pancreatitis and all acute abdominal diseases—$X^2 = 217$

All of these X^2 values indicate chance sampling would have given these results in frequency much less than .001 and are therefore all significant. Since the methods of diagnosis of acute pancreatitis in this series cannot easily be questioned, some valid conclusion can be drawn. In the severe cases of acute pancreatitis here studied, the adrenalin mydriasis test of Loewi was highly accurate as a differential laboratory aid in acute abdominal diseases. Aladjem considers the test even better than serum amylase levels when the onset has been more than 24 hours before examination. It is unfortunate that two other procedures were not included: one, that serum lipase levels were not determined, and two, that both serum lipase and amylase levels were not done on all acute abdominal patients or at least all with false positive Loewi's tests.

Mechanism of Test

The mechanism by which Loewi's test becomes positive is as yet a mystery. To be sure there have been many theories and some experimental work on the subject.

As has already been mentioned, Loewi thought his experiments indicated an internal secretion of the pancreas which inhibited the sympathetic nervous system. In absence or in diminished quantity this pancreatic substance produced hypersensitive sympathetic responses. That Loewi correlated this with diabetes is interesting, but for the test, unfortunate.

Biedl and Offer ligated the thoracic duct. In their experiment this caused glycosuria and adrenalin mydriasis was observed. They believe that pancreatic extract goes through the lymphatic system into the circulation. Blockage of this substance from circulation was thought to be the cause of the positive Loewi's test.

One test done by Aladjem may indicate some thread of the truth in Loewi's original theory. In 17 children with acute parotitis epidemica the Loewi test was applied. Six were positive and the other eleven were tested in the early days of their illness.

Besides the original ideas of Loewi, there are

other explanations. Cords demonstrated that increased epinephrine blood levels would tend to cause a positive Loewi's reaction. However, epinephrine mydriasis could not be demonstrated unless toxic doses of epinephrine were given. Cords, therefore, assumed that still another factor was necessary. He believed the additional factor to be an unexplained irritability of the sympathetic nervous system but could not demonstrate this experimentally. However, he was able to document that a certain concentration of epinephrine in the anterior chamber of the eye caused the adrenalin mydriasis. Normal animals showed maximum pupillary dilatation with epinephrine concentration in the aqueous humor of 1:150,000 to 1:200,000. Concentrated (0.5 per cent) solutions of epinephrine gave easily apparent dilatation within 10 to 20 minutes when placed in the conjunctival sac. Cords also showed positive Loewi's tests in patients with corneal inflammation, ulcers and cracks which converted to negative tests after treatment of the corneal lesions. He assumed this was due to an increased absorption of the epinephrine through the diseased cornea.

Ferandey disagreed emphatically, stating that no mydriasis was observed with "strongly inflamed eyes, or with cicatrixes or ulcerations of the cornea."

Frank however, demonstrated adrenalin mydriasis in the cat after injuring the eye with creosote. Frank was unable to show positive Loewi's reaction with conjunctivitis patients but with ulcers and epithelial ruffing the tests were always positive.

Others considered increased absorption was the mechanism but went on to suggest blood sugar levels were responsible.

Cords, as has been previously noted, showed this assumption to be false.

Cope believed disturbance of the suprarenals by contiguous disease was responsible for hypersensitivity to epinephrine. Bailey considered that mechanical pressure of a swollen pancreas might cause paralysis or irritation of the celiac ganglion. Aladjem in seven cases of various abdominal conditions opened the abdomen under local anesthesia and infiltrated novocaine into the celiac ganglion. After this procedure none of the patients showed other than a negative Loewi's test.

Some writers explained the Loewi reaction as an imbalance of the reciprocal relationship of the pancreas, thyroid and adrenals. Adrenals were thought to increase thyroid activity and to suppress the pancreas and conversely. This would help explain the variable results of Loewi's test in thyroid disease. Falta observed adrenalin mydriasis in dogs he had prepared with thyroid extract. Pancreatectomized and thyroidectomized dogs did not show any effect or only a slight delayed reaction to adrenalin administration in the conjunctival sac.

Cords, although unable to explain these findings, believed a simpler mechanism was the cause of all or many of the positive Loewi's tests in hyperthyroidism, at least those in cases with exophthalmus. He pointed out that there was decreased tear formation and a dry cornea with cracks, which led to increased absorption of the topical adrenalin.

Discussion

It appears then that Loewi's adrenalin mydriasis test is still on uncertain ground. The test is far from being pathognomonic and in view of published work only constant in more severe cases of acute pancreatitis. The test is however worthy of clinical trial as a simple bedside test in spite of its limitations. Otto Loewi may have had greater insight into the mechanisms of this test than it would seem and further investigation of these relationships could be very interesting.

Summary

The difficulty of bedside diagnosis of acute pancreatitis is discussed along with enumeration of the more important signs, symptoms, and laboratory aids used in augmenting the clinical impression.

The differential diagnosis of acute pancreatitis includes many acute medical and surgical conditions. As many of the diagnostic possibilities require varied and at times opposite treatments, the need of accurate diagnosis becomes most important.

Loewi in his investigation of diabetes suggested using epinephrine in the conjunctival sac as a measure of hypersensitivity of the sympathetic system which he believed was characteristic of diabetes mellitus. The test consists of administration of four drops of 1:1000 epinephrine into the eye, and repeated in five minutes. The test is read in 20 to 60 minutes using the untreated eye as a control. Careful attention must be made to insure that the cornea is intact and that the patient has not been given cocaine or morphine previously.

In clinical experience, Loewi's reaction has met with both approval and disapproval but has never gained wide use. There seems to be a strong positive correlation to acute pancreatitis when the test is used as a diagnostic aid in acute abdominal diseases. As is the case with many other laboratory tests Loewi's adrenalin mydriasis serves as an indication of a given diagnosis but is not pathognomonic of it.

The mode of action of the test is not as yet understood. Several theories are discussed.

Letterman Army Hospital
San Francisco, California

References may be obtained by writing the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 315 W. 4th Street, Topeka, Kansas.

Committee
REPORTS

Defective Hearing

Part III—In the Child of School Age

C. W. ARMSTRONG, M.D., *Salina*, Editor

The child of school age who is referred for examination may range in age from six to sixteen years and, in general, may have a physical examination to include the ears, nose, throat, temperature, and removal of wax, debris, and pus prior to audiometry.

If handled gently, the adenoids may also be seen with a warm mirror at this time and the patient's confidence and cooperation obtained in preparation for hearing testing. During this period the patient should be observed to determine if the examiner's usual voice is heard in both of the patient's ears, or in one ear better than the other as evidenced by head turning. If the child's hearing seems better when the examiner's face and mouth are visible, the child is probably doing some lip reading. Many patients appear to hear the examiner's voice well although subsequent audiometry belies this evidence. The volume and quality of the examiner's voice must be correlated with these findings. If the examiner has a soft voice, the child may hear only when he sees the examiner's face. If the examiner has a loud voice, the child may hear even though his back is turned to the examiner.

A series of six articles on Defective Hearing in Children is being printed in the *Journal*. These articles were prepared by C. W. Armstrong, M.D., Salina, Kansas, for the Committee on Conservation of Hearing and Speech. The committee members are V. R. Moorman, chairman, C. W. Armstrong, J. A. Budetti, R. A. Draemel, E. L. Gann, C. L. Gray, W. P. McKnight, E. E. Miller, Ruth Montgomery-Short, W. D. Pitman, R. R. Preston, G. O. Proud, R. E. Riederer, and M. J. Ryan.

The titles of the coming articles will be Interpretation of Audiograms, Evaluation of Clinical Data, and Conclusions.

Examination Room Should Be Quiet

In proceeding with the audiometric examination a relatively quiet room, free of relatives and friends, is very desirable. The patient is seated across from or beside the doctor at a table upon which the audiometer is placed. It is preferable that the patient see no dials. He is then directed to hold the ear phone to his ear and is asked if 2,000 cycles can be heard at 20 decibels. He is also asked if 3,000, 4,000, and 5,000 cycles can be heard at the same intensity. If he does not hear, the power is increased enough to introduce the patient to the tones he is expected to hear later in the test.

This is the third article in a series of six prepared by the Kansas Medical Society Committee on Conservation of Hearing and Speech and edited by Dr. C. W. Armstrong, Salina. The next article will appear in the February issue of the JOURNAL.

The formal audiometric test is then started with the 2,000 cycle tone at zero decibels. The volume is increased in five decibel steps until the tone is first heard. This point is marked on the audiogram card with a suitable symbol such as a small circle or (O) for the right ear and an (X) for the left ear. Since auditory fatigue occurs easily, the highest tone on the audiometer is next used in the test. The testing procedure is followed downward from tone to tone until the lowest tone has been tested. The symbols on the audiogram are then connected with a line. The opposite ear is tested in the same manner and a curve is drawn.

As a matter of interpretation of the audiogram, the 500 to 2,000 cycle tones are used in normal conversation. If the loss for these tones is 15 decibels or more, a whisper may not be well heard. If a loss of 30 decibels is found, ordinary conversation is difficult to hear. If the loss is greater than 40 decibels, the decrease in hearing may be classified as severe.

Following the completion of the air conduction audiometric test, further tests with the bone conduction receiver or tuning forks may be desired and at times may throw additional light upon the patient's condition.

Objects of the Examination

The objects of this examination are to establish the presence or absence of a hearing defect, to gain some insight as to its severity and when added to other known clinical information, to lay the foundation of a clinical diagnosis. This leads to better management of the patient's condition. It becomes apparent at this point, especially to those who have an audiometer, that the whisper, the watch, and the tuning fork tests give extremely crude estimates of hearing ability. When used alone they are far below the results from audiometry in clinical accuracy. Therefore, the work done by the examiner in the school can be checked properly only by the same or better method than that employed in the original school survey.

While it is advisable to check and re-check the hearing by audiometry of the school age child, the doctor must be forbearing with the younger children as a prolonged bout of testing will lead to fatigue and its attendant errors.

Upon Completion of Test

Having completed his examination the physician now compares his audiogram with the one given the patient by the school examiner to see if there is any variation. This comparison is not made until this point because of a general unconscious tendency of people to "get the same results" as others. Others may try to prove the school examiner to be wrong. Neither approach is proper and such attitudes must be eliminated to the point of being impersonal. Occasionally, it will be found that an improvement in hearing has occurred. This is not necessarily due to an examiner's error, but is quite possibly due to the fact that an upper respiratory infection which was present at the time of the school examination has since cleared. Perhaps such an improvement will occur with the removal of wax during the physical examination. If a large quantity of cerumen must be removed prior to audiometry, such handling may cause a middle ear congestion that results in a sufficient increase of hearing loss that it is advisable to wait one or two days before doing an audiometric examination.

(To be continued in the next issue of the JOURNAL.)

710 United Building
Salina, Kansas

Help for Family of Cancer Patient

A new pamphlet designed to assist the families of cancer patients meet the difficult physical and psychological problems connected with that disease has been issued by the Public Affairs Committee in cooperation with the American Cancer Society.

Written by Elizabeth Ogg with the assistance of several medical groups specializing in cancer research and treatment, the pamphlet suggests ways of "handling the situation created by your relative's cancer with a minimum of mental suffering." It also contains specific advice on preparing for surgery and rehabilitation after surgery. The latest of the non-profit Public Affairs Pamphlet series, it is available for 25 cents from the Committee's office at 22 East 38th Street, New York 16.

Stressing the fact that half of all cancers are curable if detected and properly treated in time, the author stresses the importance of obtaining prompt bona fide medical care.

"Of course, you would not knowingly put your loved one in the hands of a quack," the author declares. "But you might do so without realizing it. Many quacks play on the hopes of the cancer patient and his family with skill in appearing as scientific and professional as any doctor." Six ways in which a quack betrays himself are listed to help families guard against such deception.

Maternal Mortality

A 35 year old gravida III para II died in a well staffed and equipped hospital with a certificate diagnosis of bilateral bronchopneumonia due to influenza complicated by complete abortion. This diagnosis was supported by autopsy findings.

Medical history contributed nothing pertinent.

One week prior to admission to the hospital, the patient, who was then four and a half months pregnant, developed malaise, headache, low grade fever, and bright red vaginal spotting. Dyspnea, substernal pain, and a non-productive cough followed after several days and spiking temperature with strong chills developed. One hour before admission, spontaneous, incomplete abortion of twins occurred.

Acute respiratory distress was obvious on admission with a pulse rate of 120, temperature of 103, and moist rales and rhonchi in both lungs. Slight vaginal bleeding was present and the cord was protruding from the vaginal orifice. Albuminuria, four plus, and a white count of 2,450 with 53 per cent neutrophils and 47 per cent lymphocytes were the only unusual laboratory findings. Oxygen, intravenous fluids, antibiotics, and an oxytocic were administered. The placenta was expelled as a result of the last. The patient's condition deteriorated for the first 18 hours by which time she was moribund, hallucinations developed, and the abdomen became distended requiring gastric suction. Hydrocortisone and vasopressors were used and stabilization followed. For about three days there seemed to be progressive improvement with clearing of the pneumonitis. Throat cultures grew a beta hemolytic streptococcus strain.

On the seventh day, she suddenly became worse with a persistent rise in temperature to 103-105 and an irreversible fall in blood pressure which would not respond to therapy. Death occurred that evening. Subsequently, blood cultures showed growth of micrococcus pyogenus, variety aureus.

Autopsy disclosed micro-abscess formation of the cortex and medulla of both kidneys and of the myocardium and epicardium, bilateral pneumonitis with edema and inflammatory changes of the endometrium and myometrium. The pathologic picture therefore included influenza, type A, bronchopneumonia, abortion, and septicemia.

Committee Opinion

It was the opinion of the committee that this was a maternal death which would be considered nonpreventable from the standpoint of the obstetrical situation. Had the patient availed herself of medical attention sooner, death would undoubtedly have been preventable. The only therapeutic point suggested was the possible use of supportive blood transfusions.

The possibility of the abortion being induced and its contribution as a source of sepsis was given considerable attention. Since neither the attending physician nor the reviewing physician could obtain any further information regarding it, no positive conclusion could be drawn as to the relationship of the onset of illness and the vaginal bleeding. It seems probable that there was an initial streptococcal infection which responded to antibiotic therapy only to have the patient succumb to an overwhelming resistant pyogenes aureus invasion.

Classification

Maternal death, non-obstetric, nonpreventable.

One of a series of case reports prepared by the Committee on Maternal Welfare to illustrate the type of study made in each instance of maternal death in Kansas.

Vomiting, Rebound Tenderness, Fever, and a Tender Pelvic Mass in an Elderly Woman

Case Presentation

The patient for this conference was a 68-year-old Negro woman who was admitted to KUMC for the first time on May 28, with the complaint of abdominal pain for 18 hours. The pain was constant and located in the lower abdomen with maximum intensity in the right lower quadrant. She had recently had some loose, yellow stools, but she had no melena, chills, fever, jaundice, or hematemesis. She had had intermittent constipation for several years. One week before her admission she had an episode of vomiting, and since then she had had anorexia. For several hours before admission there had been frequency of urination.

She was grava I, para II. She had been receiving treatment for hypertension and allergic rhinitis in the outpatient clinic since 1948, but had had no previous hospitalizations or operations.

Her mother died at 59 years of age of carcinoma of the stomach.

The patient was a moderately obese Negro woman with acute abdominal pain. Moist rales were heard in the left lung base. The cardiac examination was normal. Her abdomen was tympanitic and slightly distended, and there was guarding and rebound tenderness in the right lower quadrant. A tender mass was palpated in the cul-de-sac, and there was a questionably enlarged uterus or ovarian mass. Bowel sounds were active.

The specific gravity of the urine was 1.020 with 1-2 pus cells per high power field and one plus albumin. The hemoglobin was 13 gm. The white count was 19,750 with 82 per cent polymorphonuclears. The blood urea nitrogen was 12 mg. per cent; fasting blood sugar, 7.7 mg. per cent. Thymol turbidity was three plus; amylase, 97 units.

The patient was treated with gastric suction, parenteral fluids, chloramphenicol and succinylsulfathiazole. A sigmoidoscopic examination was negative to 15 cm. By the fourth hospital day her symptoms had subsided, and she was discharged on June 4.

She was readmitted on June 12 for a repeat barium enema and for re-evaluation. She had been treated with chloramphenicol and succinylsulfathiazole as an outpatient. Since her last admission she had remained asymptomatic, and her appetite had been good.

Her blood pressure was 160/90. The hemoglobin was 10.3 gm., and the white count was 11,350 with 64 per cent polymorphonuclears. The prothrombin time was 72 per cent of normal. There was mild A-V nicking of the retina. The lungs were clear, and no cardiac murmurs were heard. There was slight right lower quadrant tenderness and guarding without rebound tenderness. There were no enlarged abdominal organs. An extensive, extrinsic mass was noted posterior to the bladder.

On June 16 an exploratory laparotomy was performed. Her postoperative course was uneventful, and she was discharged on June 27.

Dr. Robert Manning (moderator): Are there any questions?

Roger Reitz (student)*: What was her temperature course while she was in the hospital?

Dr. Kenneth Hedrick (resident in surgery): On her first admission her temperature was 102.4 degrees, and there were daily elevations to around 100 degrees until the last two hospital days. She was afebrile on her second admission.

John Slater (student): Did she have any weight loss?

Dr. Hedrick: She continually tried to reduce, and her weight fluctuated considerably over the years.

Edited by Jesse D. Rising, M.D. and Mahlon Delp, M.D. from recordings of the conference participated in by the departments of medicine, pediatrics, surgery, radiology, and pathology of the University of Kansas Medical Center as well as by the third and fourth year classes of students.

* Although a student at the time of this conference in December, 1958, he, like the others referred to as students, received the M.D. degree in June, 1959.

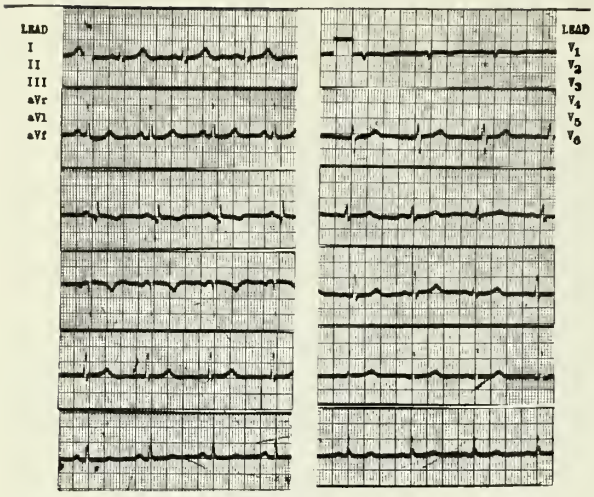


Figure 1. Electrocardiogram taken on September 22, 1955.

Mr. Slater: What were her bowel habits just before her first admission?

Dr. Hedrick: She complained of intermittent constipation.

Don Van Derby (student): What was the character of her stools?

Dr. Hedrick: They were yellow and loose.

Kenneth Reed (student): Did she have a previous history of epigastric distress?

Dr. Hedrick: She complained of epigastric pain on her first admission.

Robert Reinecke (student): Was there any other mention of the rales in the chest on the first admission?

Dr. Hedrick: No, the lung fields were clear.

Mr. Van Derby: Was an abdominal mass palpated?

Dr. Hedrick: No.

Douglas Voth (student): Were stool cultures done?

Dr. Hedrick: No.

Mr. Voth: Were any skin tests done?

Dr. Hedrick: No, there were none.

Wilbur Neel (student): Will you describe her pelvic examination?

Dr. Hedrick: There was only the extrinsic mass posterior to the bladder.

Mr. Reinecke: Did she have any vaginal discharge?

Dr. Hedrick: No, she did not.

Mr. Slater: Why was the sigmoidoscopic examination terminated at 15 cm.?

Dr. Hedrick: It was impossible to negotiate any higher.

Mr. Van Derby: What were the hematocrit values?

Dr. Hedrick: On the first admission the hematocrit was 43 ml.; on the second admission it was 33.5 ml.

Mr. Reitz: Did she have any vomiting while hospitalized?

Dr. Hedrick: She had two episodes of vomiting during her first admission.

Mr. Voth: What were the guaiac tests on the feces?

Dr. Hedrick: That test was not done.

Mr. Reed: Were bowel sounds ever absent?

Dr. Hedrick: On her first admission the bowel sounds were active.

Mr. Van Derby: Did she have any flushing or cyanosis?

Dr. Hedrick: No.

Mr. Neel: What was the serology?

Dr. Hedrick: The serology was negative.

Mr. Slater: Was there any evidence of eosinophilia?

Dr. Hedrick: The eosinophil count was 2 per cent on the first admission.

Mr. Reitz: Did she have arthralgia?

Dr. Hedrick: No, she did not.

Mr. Reitz: What was her blood pressure?

Dr. Hedrick: Her blood pressure had been high, but over a period of years it dropped from 200/100 to 150 to 160 systolic and 85 to 90 diastolic.

Mr. Voth: Did she have any previous history of lower abdominal distress?

Dr. Hedrick: No, she did not.

Mr. Slater: Was the mass in the cul-de-sac tender?

Dr. Hedrick: It was.

Dr. Manning: Dr. Webster, will you describe the pelvic examination, please?

Dr. Joseph G. Webster (associate in obstetrics and gynecology): The patient was so extremely tender that the examination was entirely inadequate, but it was my impression that there was a mass and that the pelvis was slightly fixed.

Dr. Manning: Thank you. May we have the electrocardiograms, please?

Mr. Reed: The first tracing taken on September 22, 1955 (Figure 1), shows a regular rhythm and a rate of approximately 80. P waves are normal and present in all leads. The T wave is inverted in V_1. There is a fairly normal progression of the R wave across the chest. The P-R interval is less than 0.2 and is in the range of normal. The Q-T interval is not prolonged; there is presence of a Q wave in lead III. I interpret this as a normal electrocardiogram.

The second tracing is essentially the same as the first one. The rate is still approximately 80 and regular. The QRS vector is still the same, approximately plus 30. There is a V_4R lead which was not present in the previous tracing. There is T wave inversion in leads V_1 and V_2 with plus T wave in V_3. The Q wave which was present in lead III is somewhat deep-

er in this lead. I interpret this as a normal electrocardiogram.

Dr. Manning: May we have the x-rays now, please?

Mr. Neel: A P-A of the chest on May 28, 1958, shows no bony abnormalities. The costophrenic angles are clear, and the diaphragm appears smooth and is not elevated. The transverse diameter of the heart is moderately increased. There is prominence of the aortic knob with some calcification. The pulmonary conus and outflow tract are not prominent. Numerous calcifications are seen in the hilus bilaterally. There is also a slight infiltration in the left lower lobe.

An upright film of the abdomen taken on May 28 (Figure 2) shows slight lipping of the vertebra. No psoas shadows are seen. There are fluid levels throughout the lower bowel. I interpret this film as showing partial obstruction compatible with ileus.

An intravenous pyelogram on the second admission shows the outline of the left kidney which appears to be somewhat hypertrophied, but seems to be functioning normally, and the outline of the right kidney which appears slightly hypoplastic and shows hypofunction. I believe the hypoplastic kidney with hypofunction can be explained as Goldblatt's phenomenon in a case of hypertension.

A barium enema on the second hospital admission shows filling of the entire colon with some flowing into the lower ileum. There are no deformities or intrinsic or extrinsic masses. There are normal haustrations in this area. I interpret this as a normal film.

A post-evacuation film taken following the barium enema shows the retention of barium compatible with a diverticulum in the sigmoid colon, but this area could be due to retained fecal material.

Dr. Manning: Dr. Tice, may we have your comments, please?

Dr. Galen Tice (radiologist): The original chest film showed moderate enlargement of the heart and calcification of the pleura. On the original KUB film there were numerous calcified deposits which appeared to be calcification of small fibroids.

Dr. Manning: Thank you. May we have your discussion now, Mr. Voth?

Differential Diagnosis

Mr. Voth: Our case today concerns a 68-year-old colored woman who had been followed in the outpatient clinic since 1948. Seven days before admission she came in with a history of vomiting for one day. She had anorexia, loose, yellow stools, rebound tenderness, abdominal distention and a tender pelvic mass. The signs and symptoms of the acute abdomen were ameliorated by conservative management. She was dismissed, but eight days later she was readmitted at which time a laparotomy was performed.

Figure 2. X-ray on May 28, 1958.

Her postoperative course was uneventful, and she was discharged.

Periarteritis and collagen disease can produce this clinical picture, but I shall dismiss them because of the lack of multiple system involvement and lack of characteristic laboratory findings.

Primary involvement of the urinary tract is an unlikely diagnosis because of the negative urinalysis and normal blood urea nitrogen, and because she had no chills, fever, or costovertebral angle tenderness. I believe there was a hypoplastic kidney, and I cannot rule out an extrinsic mass to the kidney.

Almost all of the features in our patient's case could be attributed to gallstone ileus. I find it difficult to dismiss acute cholecystitis in the acute abdomen, but I shall rule out all primary biliary tract diseases because she had no chills, fever or jaundice, and because of the lack of characteristic stool and urinary findings.

Retroperitoneal sarcoma and lymphoma must be mentioned, but I shall dismiss them because of the lack of the typical adenopathy, lack of marked anemia and because of her clinical course.

Malignancy of the uterus and tubes, tubo-ovarian abscess and salpingitis can be dismissed because of the patient's age and because she had no chills, fever or vaginal discharge.

Infarction of a uterine leiomyoma or a torsion of an ovarian tumor may cause a similar clinical picture, and numerous such instances have been reported, but I shall rule them out because of the patient's age, the lack of coincidental onset of symptoms, and because she got well so rapidly.

Gastric and small bowel carcinoma are unlikely diagnoses because there is no history of epigastric dis-

Figure 3. Invasion of submucosa by irregular tumor acini. Well differentiated and producing mucus. Hematoxylin and eosin stain. X38.

tress, no melena or hematemesis and no abdominal masses.

I shall also rule out amoebic abscess and regional enteritis.

Dr. Manning: What is meant by regional enteritis?

Mr. Voth: It is a chronic granulomatous inflammation of the cecum. I also rule out ileocecal tuberculosis and mycosis because of the lack of symptoms, especially diarrhea, the patient's age, the lack of characteristic x-ray findings, and the clinical course.

Abdominal vascular accidents should be mentioned here, but the clinical course refutes this diagnosis.

Meckle's diverticulitis must also be considered in the acute abdomen, but in 90 per cent of these cases the patient is less than 30 years old, and twice as many males as females are affected.

Diverticulosis precedes the development of diverticulitis of the left colon and is usually found in the sigmoid region. Symptoms of the disease in the acute stage are abdominal pain and distention, fever, diarrhea, or constipation, and urinary symptoms of frequency and dysuria. A mass is frequently palpated in the abdomen or in the pelvis, and rectal bleeding is found in 25 per cent of the acute cases. This diagnosis is an attractive one and cannot be ruled out altogether, although the x-ray findings do not seem to apply here.

Appendicitis in the elderly patient is characteristically atypical. The classical symptoms are often modified, and fever and leukocytosis may be absent. Serious complications, such as perforation and abscess formation, may be absent or silent, or they may cause prostration and death. Antibiotics given to these patients may completely mask these symptoms. Indeed, the history and clinical course of our patient are quite consistent with this diagnosis, and I cannot rule it out.

Left-sided carcinoma of the colon is not too likely here because of the lack of the preceding symptoms of weight loss and change in bowel habits, and in this disease there is usually blood in the feces. The absence of x-ray evidence of this does not necessarily rule it out. Right colon carcinoma has an insidious onset usually with mild symptoms of dyspepsia, middle or lower gastrointestinal complaints, and a mild or marked anemia.

About 15 per cent of patients with cecal carcinoma present with the diagnosis of appendicitis. I cannot rule out right or left colon neoplasms. At least 170 cases of cecal diverticulitis have been reported of which 85 per cent were diagnosed as appendicitis. The symptoms are usually somewhat mild, as in our patient's case, and recovery is rapid on conservative management. Twenty-five per cent of these patients have symptoms of right iliac fossa pain, and frequently there is a palpable mass.

Finally, the patient could have had an infectious or neoplastic disease with or without perforation of a viscus, but I believe she had an acute cecal diverticulitis.

Clinical Discussion

Dr. Manning: Mr. Van Derby, do you agree that there are now 171 cases reported of right-sided diverticulitis?

Mr. Van Derby: I certainly do not. I believe she had early cecal carcinoma with the complication of appendicitis.

Dr. Manning: Mr. Reinecke?

Mr. Reinecke: I agree with the diagnosis of right diverticulitis.

Dr. Manning: Mr. Slater?

Mr. Slater: I believe she had diverticulitis of the left colon.

Dr. Manning: Mr. Reed?

Mr. Reed: Left-sided diverticulitis.

Dr. Manning: Mr. Reitz?

Mr. Reitz: I believe she had appendicitis with perforation.

Dr. Manning: Mr. Van Derby, what is your opinion of the patient's response to antibiotics as a point in the diagnosis?

Mr. Van Derby: These patients often respond rather well to antibiotics for a while.

Dr. Manning: Mr. Neel, what is your diagnosis?

Mr. Neel: Acute appendicitis.

Dr. Manning: What is your opinion about the pathogenesis in this case?

Mr. Neel: In the elderly patient there is loss of elastic tissue with fibrotic changes in the appendix and perhaps impaired blood supply. There are ischemic changes with edema and blocking off.

Dr. Manning: Do you agree with Mr. Van Derby's idea that a carcinoma might lead to an appendicitis?

Mr. Neel: It is not uncommon. These patients frequently present with appendicitis.

Dr. Manning: Mr. Reitz, do you believe that our patient's non-functioning right kidney is of any significance?

Mr. Reitz: It could easily explain her hypertension.

Dr. Manning: Mr. Reinecke, is there any correlation between this kidney x-ray and the patient's present disease?

Mr. Reinecke: No, I do not believe so.

Dr. Manning: Do you believe this was an obstructive phenomenon with a right-sided pelvic mass?

Mr. Reinecke: No.

Dr. Manning: Mr. Voth, is there any significance between the normal electrocardiogram and her history of hypertension for ten years?

Mr. Voth: Her hypertension varied from 150-200/85-100, and I believe that that is entirely consistent.

Dr. Manning: Do you believe she had a benign hypertension?

Mr. Voth: Yes, I do. There is no evidence of hypertensive episodes with crisis or encephalopathy.

Dr. Manning: May we have your opinion, Dr. Berry?

Dr. Maxwell G. Berry (internist): I agree with the students' diagnosis of appendicitis.

Dr. Manning: Dr. Rankin?

Dr. Thomas J. Rankin (internist): My prime consideration for the site of the diverticulum would be at the tail end of the cecum. I believe the surgeon who explored this case, while having to entertain many other difficult diagnoses, would have to consider even left-sided diverticulitis which presented in the right lower quadrant. He would also consider the question of a malignancy with secondary infection, and still would have to go along with the basic concept that his type of approach would be for appendicitis. It should be emphasized that the patient did have an infective abdominal condition, but the reduction in hemoglobin from 13 to 10.3 gm. is, I believe, a fairly rapid fall for a simple appendicitis. Perhaps the student's concept that this was a complication or result of an early carcinoma of the cecum is correct. I can only add that I believe that this type of abdominal infection in the older patient often presents more insidiously and gently than it does in the younger individual.

Figure 4. Lumen of appendix indicated by arrow. Other two clefts are sinus tracts connecting with periappendiceal abscess. Hematoxylin and eosin stain. X17.

Dr. Manning: Dr. Schloerb, will you describe the operative findings, please?

Dr. Paul R. Schloerb (surgeon): Before the operation, while the patient was under anesthesia, abdominal palpation was again performed which, because of previous tenderness, was not very informative. At that time, the patient had a right lower quadrant mass, and because of that the pre-operative diagnosis was sigmoid diverticulitis. It was thought that the sigmoid was largely in the midline and partly in the right lower quadrant and was involved by diverticulitis. The incision was changed to the right lower quadrant, and on opening the peritoneum an inflammatory mass was found involving the terminal small bowel and the cecum and intimately adhered to the uterus. Because of bleeding the uterus was removed, and there was resection of the terminal ileum and the residual up to the mid-ascending colon. This, then, was a right colectomy but not actually a cancer operation. The only apparent finding was an inflammatory mass. Postoperatively the patient did well.

The question arises, under these circumstances, as to the origin of the mass, and certainly appendiceal abscess would be one of the first diagnoses to be considered. Cecal diverticulitis, however, may present in exactly the same way, and cecitis, or Crohn's disease, is another not uncommon finding in such a situation. The presence of foreign bodies, too, may occasionally

produce similar findings. As an example, a toothpick coming down the ileum may perforate in the region of the cecum and may produce an identical type of rapid inflammatory reaction. Aside from an apparent inflammatory mass the actual pathologic diagnosis was not made at the time of surgery. The treatment was to remove the cause of the trouble.

Dr. Manning: Dr. Weber, do you have any comments?

Dr. Robert Weber (internist): It is of interest that the patient, on her first admission, had a mass that had appeared in 18 hours, apparently with acute onset. It is unusual for a mass to appear so rapidly, and I believe that probably the use of the antibiotics did contribute toward producing this mass.

Mr. Van Derby: Many articles report that a diagnosis of early carcinoma of the cecum is usually made only on pathological sections.

Dr. Manning: Several standard surgical textbooks mention this specific pathological diagnosis. May we have the pathologist's report, please?

Pathological Report

Dr. James Boley (pathologist): The pelvic mass palpated clinically was the uterus which contained many subserous and intramural fibroids and which weighed three hundred grams. An endometrial polyp was also found but had no bearing on the symptoms and signs of the patient.

The specimen of major significance was the terminal ileum, cecum ascending colon and appendix. A hemorrhagic firm mass inferior to the cecum obscured the appendix. The mass had many fibrous tags indicating that surrounding structures had been adherent. Upon section of this mass the proximal and distal part of the appendix were thick and edematous. The central part of the appendix was replaced by a soft mass which was hemorrhagic and not unlike granulation tissue. A probe could be passed from this space into the cecum. The opened cecum contained an elevated tumor which covered the ostium of the appendix, was rather flat, had rolled edges, and, for the most part, was not adherent to the muscularis.

Microscopically the greater part of the cecal lesion was a sessile papiloma with much atypism of the acini. By taking numerous sections, however, actual invasion of the submucosa by tumor acini was found (Figure 3). The central part of the appendix was necrotic and a sinus tract (Figure 4) could be traced into a periappendiceal abscess which was well encapsulated by a fibrous wall.

It is my opinion that the patient had this rather small carcinoma of the cecum which obstructed the appendix. This obstruction resulted in an acute appendicitis which subsequently perforated, caused peritonitis, and finally became localized to form a periappendiceal abscess.[1] This abscess spontaneously drained into the cecum. An increasing number of similar case reports of carcinoma of the cecum have appeared in the surgical literature during the past ten years.[2, 3, 4]

Dr. Manning: Thank you, Dr. Boley. Carcinoma of the cecum is not an uncommon etiologic factor in the precipitation of acute appendicitis or in perforation of the cecum leading to cecal or periappendiceal abscess. I would also like to emphasize that the diagnosis of appendicitis in an older patient is typical only in that it is quite atypical. If one reviews the cases of appendicitis with appendiceal abscess in the geriatric patient there are no two that seem to quite fit together. They are extremely difficult and should always be considered in an older patient who presents with either lower or upper abdominal complaints.

Pathological Anatomical Diagnosis

Papillary carcinoma of cecum.
Acute appendicitis with perforation.
Periappendiceal abscess.

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101st ANNUAL MEETING
of
KANSAS MEDICAL SOCIETY
Hutchinson, Kansas—May 2-4

Just BROWSING

The Oath of Hippocrates is familiar to all physicians and to many other people, but many of his other writings are not as well known. Some of the "Aphorisms" are interesting, many reflecting an astuteness which is quite "modern."

"Life is short, and the Art long; the occasion fleeting; experience fallacious, and judgment difficult. The physician must not only be prepared to do what is right himself, but also to make the patient, the attendants, and externals co-operate.

* * *

"Old persons endure fasting most easily; next, adults; young persons not nearly so well; and most especially infants, and of them such as are of a particular lively spirit."

* * *

"Growing bodies have the most innate heat; they therefore require the most food, for otherwise their bodies are wasted. In old persons the heat is feeble, and therefore they require little fuel, as it were, to the flame, for it would be extinguished by much. On this account, also, fevers in old persons are not equally acute, because their bodies are cold."

* * *

"Both sleep and insomnolency, when immoderate, are bad."

* * *

"Neither repletion, nor fasting, nor anything else, is good when more than natural."

* * *

"Persons who have a painful affection in any part of the body, and are in a great measure insensible of the pain, are disordered in intellect."

* * *

"It is better that a fever succeed to a convulsion, than a convulsion to a fever."

* * *

"Persons who are naturally very fat are apt to die earlier than those who are slender."

* * *

"Of two pains occurring together, not in the same part of the body, the stronger weakens the other."

* * *

"In a pregnant woman, if the breasts suddenly lose their fullness, she has a miscarriage. . . . If, in a woman pregnant with twins, either of her breasts lose its fullness, she will part with one of her children; and if it be the right breast which becomes slender, it will be the male child, or if the left, the female."

* * *

"Sneezing coming on, in the case of a person afflicted with hiccup, removes the hiccup."

* * *

"Persons who have become bald are not subject to large varices; but should varices supervene upon persons who are bald, their hair again grows thick."

* * *

"Those diseases which medicines do not cure, iron *(the knife?)* cures; those which iron cannot cure, fire cures; and those which fire cannot cure, are to be reckoned wholly incurable." (O.R.C.)

The President's Message

DEAR DOCTOR:

The medical profession is fortunate to have many friends and allies in its efforts to be of service to the public. One of the most loyal groups on whom we may rely is the Medical Assistants Society.

The Kansas medical profession has for many years been proud of the Medical Assistants organization within its state. These girls, whom we individually find indispensable, have banded themselves together in order to do a better job for us. They are spending much of their leisure time attending meetings to train themselves how to keep your patient, and you, happy. The patient is in contact with your medical assistant first. First impressions set the stage for the successful care of the patient and his problem.

Many of you know that the members of the Kansas Medical Assistants were quite active, and indeed, were the guiding hands, in the formation of the American Association of Medical Assistants, now in its fourth year. Kansas girls were among the first officers of the fledgling group and have remained in the forefront of the national organization. A new film entitled "First Contact" has recently been produced through cooperative effort of the American Medical Society, the American Association of Medical Assistants, and a pharmaceutical firm. This film is available to Medical and Medical Assistants Societies for showing in order to organize groups and to promote memberships. Your society may want to avail itself of this film.

While the Kansas medical profession has been active in its encouragement of this important group, many of our doctors either are unaware of the organization or do not understand its goals. It is not a bargaining or grievance group. These girls are bound together for the sole purpose of education for their role of making your patient comfortable and at ease, and assisting you in your care of the sick. The competent medical assistant is one of our best public relations aid.

Each physician can help himself and his assistant by advising her to become a member of this organization. She should not only be a member, but should be encouraged to attend and participate in its activities. The physician, the assistant, and the patient will be benefited.

Respectfully yours,

Glenn R Peters M.D

President

Where We Stand on the Medical Program

MARVIN E. LARSON, Director, Kansas State Board of Social Welfare

Mr. Marvin E. Larson, director of the State Board of Social Welfare, prepared the following statement on the present status of indigent health care in this state from the point of view of the Board of Social Welfare. Because considerable interest will be generated in this subject during the coming weeks, the Kansas Medical Society hopes each physician may acquaint himself with this statement. Suggestions and comments are invited.

This address was given to the Kansas County Director's Association on November 15, 1959, at the Kansas Official Council Meeting in Wichita.

Since the beginning of the Kansas Social Welfare Program in 1938, one of the difficult problems confronting the State Board of Social Welfare and the County Boards of Social Welfare has been that of providing medical services to assistance eligibles. It has always been recognized that one of the needs in addition to food, housing, and clothing, to provide the statutory standard of a "subsistence compatible with decency and health" is the need for medical services, including physician services, drugs and medicine, and hospitalization. This is especially true with the old age assistance population, which we are prone to consider as a static group, but which actually has a turnover of nearly 100 per cent every three to four years. This is the group which, by reason of the advancing years of its members, has unusual requirements for medical services, particularly when it is remembered that the average age of this population group is about 76 years, and a large number of its membership find it necessary to live in some sort of sheltered living situation, with many of these in bed in nursing homes. Death closes most old age assistance cases; death preceded by a long period of terminal illness requiring intensive as well as extensive and long-term medical services.

Prior to the enactment of the Kansas Social Welfare Law in 1937, Kansas had a long tradition for providing medical services to indigent persons at the county level. When the Social Welfare Law was enacted in 1937 no immediate change in this pattern of providing medical services at the county level emerged. Indeed it was not until 1946 that Kansas complied with the state statutes and the conditions of the Social Security Act by making uniform mandatory standards for food, shelter, and clothing and it has not until recently considered in any serious way the matter of providing for a uniform and mandatory state medical program in spite of the fact that it has been quite obvious that the medical program in Kansas varies considerably in quantity and quality of service from county to county. In the beginning of the program and up until 1950 there was not federal participation in medical payments excepting as such payments were included in an unrestricted cash payment made directly to an assistance eligible. In addition the original state participation in county expenditures amounted to only 30 per cent. Hence in the beginning of the program there was not an appropriate legal and financial predicate for the evolution of a statewide medical program and counties dealt individually with the problem as best they could. The result has been a hodgepodge of medical plans, including the employment of physicians by the county welfare department, the operation of hospitals by county welfare departments, the evolution of prepaid insurance

plans, full payment of all medical services provided with no controls, and partial percentage payments for medical services, some with controls and some without controls.

As the general cost of hospitalizations, drugs, and medical services increased and as the requirement of this population group for special and long-termed medical services has increased these public assistance expenditures for medical services also increased, although not as rapidly. Many counties in the state were able to secure advantageous rates for public assistance eligibles. In spite of this, the increase in medical costs has been a continuing concern for many years and in 1954 a legislative council report suggested that a state monetary limit be established within which to operate a medical care assistance program.

Effective January 1, 1958 and because of the limitations of state funds for the purpose, the State Board of Social Welfare limited state funds participation in medical care assistance costs on a formulary basis closely equivalent to the expenditure for the purpose of $6.50 per eligible person per month. This policy, which remains in effect, did not limit the program expenditures for the purpose but merely limited the state fund participation in such expenditures. Therefore, counties with sufficient tax resources were able to supplement from county funds alone the amounts of medical care assistance costs in which the state would participate. The result has been widely varying rates of expenditure and varying quality and quantity of medical care which welfare eligibles have been able to procure from county to county.

Fourteen counties are levying the statutory maximum for welfare purposes. In these fourteen counties the $6.50 per person per month becomes the maximum these counties can pay. Other counties have held to the $6.50 amount despite the availability of county funds for medical purposes. Some counties have both the county funds and the desire to pay in full for medical services to assistance eligibles. The result is then a variety of local medical plans and a great deal of dissension between county departments of social welfare and local medical vendors and a great many pressures for state action to establish a uniform plan at the state level. These pressures resulted in the introduction at the last session of the legislature of House Bill No. 472 providing for a monetary limitation at state level and providing for payment by the state for medical care. This bill did not pass and the pressures have continued for some sort of state action.

At this point some review of the trends of med-ical costs might be indicated. The Bureau of Labor Statistics releases indicate the national cost of medical care has increased more than 50 per cent in the last ten years. In the same period the over-all costs of living, including medical care, has increased only 25 per cent. The increase in medical care cost on the basis of bureau reports has been constant through the period and is accelerating. The increase of each of the last six years has been greater than the increase in the previous years.

The following is a short review of the trends in medical costs in Kansas in terms of monetary amounts. Reliable total cost figures of the medical care element in the first fifteen years of Kansas program operation are not available because a great proportion of them were supplied through individual cash grants. Total costs in 1952 were approximately $3,900,000. Three years later this had increased to $4,800,000. Again, three years later in fiscal 1958-59, the total approximated $5,900,000 and it seems obvious in the current fiscal year these costs will exceed $6,100,000. This constant increase would be much larger if it was not related to a decreasing case load and if payments had not been arbitrarily limited throughout much of the state-wide program.

We are accustomed in the Kansas welfare pro-gram to talk about welfare medical costs in terms of an amount per person per month. Following is a statement of Kansas trends in these terms for the old age assistance population.

In 1946 Kansas programs expended for medical care for each person benefiting from old age assistance less than $3 per person per month. In the fiscal year ending last June 30, this figure had risen to $9.98 and current operations report show more than $10.30 per person per month for old age assistance medical care. The per person costs doubled between 1946 and 1952 and in all probability will again double between 1952 and 1960. No evidence exists that there is any prospect of medical care costs leveling off or that they will not continue to increase. The increase in over-all program expenditures and in over-all program per person costs are not so dramatic but old age assistance figures are used here as being more nearly comparable. Over-all program increases, both in total and per person, reflect the very significant change in the over-all case load make-up, that is, a constantly decreasing old age assistance case load and a constantly increasing aid to dependent children case load. Program experience indicates that medical costs for old age assistance eligibles are at least three times as great as for ADC eligibles.

You might be interested in the trends in relation to distribution of medical costs between medical vendors.

In 1946 the percentage distribution between the costs by type of service was approximately as follows:

Physicians' services	42 per cent
Hospitalization	32 per cent
Drugs	26 per cent

Thirteen years later, in 1959, the distribution was approximately:

Physicians' services	23 per cent
Hospitalization	49 per cent
Drugs	28 per cent

Obviously, the increase in drug costs has nearly paralleled the increase in the total program but the shift in hospital expense and professional service expense is rather dramatic. Actually, the physicians in Kansas are receiving today little if any more than they did seven years ago. The dollar increase is entirely hospitalization and drugs. It is sometimes assumed that the increases are due to higher fees. It must be remembered that many new drugs have been developed which were not previously available, and that many new techniques and services in hospitals are now demanded and standard, which simply were not available a few years ago. It has been said that comparing hospitalization costs in 1959 with hospitalization costs in 1939 is like comparing the cost of a Philco Bendix washer drier combination with cost of a wash tub, a washboard and a length of clothesline.

At this point I would like to correct two common misconceptions about the welfare program in Kansas. One misconception is that Kansas can provide for full medical services at regular rates charged by vendors of these services. This I believe is a daydream. It is difficult to know just how much money such a program would cost but a careful and conservative physician estimated that it would cost over Twenty Million Dollars per year. The most conservative estimate I have heard is Eighteen Million Dollars per year. It is apparent therefore that Kansas is presently paying only a third of the costs of medical services to assistance eligibles. Where does the unpaid two-thirds come from? We must assume, I believe, that most of it is donated by the medical vendors. I think it should be said here that there has been no expression of gratitude to medical vendors for this donation of services; indeed this donation has seldom, if at all, been even recognized or acknowledged. I believe we must also assume that Kansas is not ready to finance a full care-full cost medical program. Another common misconception about the Kansas welfare program is that it is a full care program.

The state of Kansas had not committed itself to a full care program but rather has committed itself to an assistance program. The full statutory provision is found at G.S. 1949, 39-701, which reads in part as follows: "it is a policy of the state to assist the needy." In connection with these two common misconceptions about the Kansas welfare program a few medical vendors do not consider public assistance eligibles as medically indigent persons. To these vendors of medical services medically indigent persons are persons on social security or who having a large family are forced to live upon a low clerical salary. Public assistance eligibles are not considered medically indigent by these vendors since they have the wealth of the county and the state of Kansas behind them.

The State Board of Social Welfare is making a serious effort to devise a uniform state plan with a design to make it effective by administrative rule and regulation. This effort is being made because of a great deal of pressure on the board from local counties for the evolution of a state-wide plan. Secondly, it is being made because the State Board of Social Welfare appreciates the fact that the state of Kansas cannot finance a full care medical program, and that some effective means of control must be devised to keep medical costs within the limitations of state appropriations for this purpose. But perhaps the most pressing reason for this effort on the State Board of Social Welfare is the fact that the present program has resulted in a great lack of uniformity in the quality and quantity of medical service being provided to public assistance eligibles in the state of Kansas. This is in violation of the law of the state of Kansas which requires in G.S. 1949, Supp., 39-708, that no rule or regulation shall be adopted which will require partiality in the amount of the public assistance to be given to the persons of this state having approximately equal need. It is also stated in G.S. 1949, 39-701, that it is the purpose and policy of the state to provide an effective, uniform system of welfare work for the state. In addition the state is out of conformity with requirements of the federal social security act.

The following statement from the director of the Federal Bureau of Public Assistance indicates the position of the Federal Department of Health, Education and Welfare in the area of medical care. I quote, "In making grants to states the Bureau (of Public Assistance) will hold that each state define medical care,' knowing that the states' definitions will vary in accordance with the conditions in each state. Some states may be able to include only the care to meet the acute emergency. Others may include a broad scope of care. The Bureau (of Public Assistance) has consistently stated that in providing a standard of economic security to all needy individuals state-wide standards of assistance must be uniformly applied throughout the state. *Thus, if medical care is in the standard, the public assistance agency must assure (the Bureau) that all eligible individuals throughout the state have an opportunity of getting the same type and amount of medical care.*" (Material in parentheses and emphasis supplied.)

This does not mean, of course, that if Kansas does not this year work out a uniform program that federal funds will be withheld immediately nor even in the near future if we do not succeed in evolving a state

plan. The federal agency knows that a medical plan is difficult, and I am sure it will go along with a state that is making a sincere effort to provide uniform services for a number of years.

Various plans for a state-wide program have been considered but except for one have the fault of not providing a uniform quantity and quality of medical care. Thus, a monetary limitation by county might seriously affect the vendors in a small county having a high incidence of illness among its few cases.

The plan the Board is presently considering would require the Board to take the following actions:

1. To establish a limited scope of medical care, that is to define those items for which the welfare department will accept responsibility for payment on behalf of its clients, and to establish a regulation to the effect that a county welfare department must not accept or incur financial responsibility for items not included in the scope definition or for rates in excess of those set forth in a maximum fee schedule.

   A limitation of scope may take various forms. It may mean that the welfare department will accept responsibility for a given number of hospital days per illness or for a given number of hospital days in a month; a limited number of doctor's calls, and prescriptions for a defined period. On the other hand, the scope could be limited as to the type of diagnosis; that is, for certain diagnoses determined to be life-endangering illnesses, the welfare department might accept responsibility but not for others.

A further implication of scope limitation is that after the welfare department responsibility has been met, the medical vendor and the client plan together for the remaining amount, that is, the client or his family or other community resources or the vendor himself may furnish the medical care in addition to that provided by the welfare department. (At the present time with the welfare department accepting responsibility for payment of each item of care, any amount paid by the client or his relative or other resource must be used to reduce the cost to the welfare department.)

2. To establish maximum fee schedules at reasonable rates for the items defined as being within the scope. The maximums would be mandatory throughout the state.

   With this arrangement each county would have more uniform experience with its medical vendors. Each vendor would know what payment could be expected and for what services and they would also know which services they would not be paid for.

3. To participate with state funds in the allowable items in the same proportion it participates in any other assistance item. There would be no fund limitation as such on each individual county but instead the holding of expenditures to the appropriated amount would be at the state level through the adjustment of the items included in the definition of scope.

4. To plan, if funds prove inadequate, a further limitation of scope of medical care. Conversely, if the amount of funds available proves more than adequate to meet the items of scope set forth in the plan, the scope of care provided could be increased.

The State Department of Social Welfare would require professional help in establishing the items within scope and the maximum fee schedule. It would establish a committee composed as a minimum of the following persons: two physicians, two pharmacists, and two hospital administrators. It would be planned that each professional association be asked for a number of nominees and the State Board would select committee members from these nominees. In addition there would be representation on this committee from the legislature, from the community at large, and from the State Department of Social Welfare. After the scope limitation and maximum fee schedules are determined and defined, the State Department would use a continuing advisory committee on the subject of medical care, this committee to consider the progress of the plan and to recommend policy and procedure changes to the State Board of Social Welfare.

For the financing of this plan, the State Department of Social Welfare arbitrarily proposed an amount equivalent to $8.50 times the state case load of public assistance eligibles per month. This amount was chosen because it represented only a slight increase in the present expenditures for medical services in the state of Kansas, including the approximate One Million Dollars of county funds in which there is no state participation.

The foregoing limited scope medical plan, with the proposed financing at the $8.50 level was discussed by staff members of the State Department of Social Welfare with the Medical Committee of the County Directors' Association and an informal committee from each of the vendors of medical services in Kansas; that is, the Kansas Medical Society, the Kansas Association of Hospital Administrators, and the Kansas Pharmaceutical Association. Each of the representatives of these vendors approved of the plan financed at this figure. They each, I believe, recognize that there is a lack of uniformity in the present plan and that some means of effectively controlling medical expenditures should be devised by the State Board of Social Welfare. The committee of the medical vendors also considered that it would be more desir-

able and feasible to have a plan devised by administrative rule and regulation by the State Board of Social Welfare than by the somewhat more cumbersome procedure of legislative action. I believe each of the committees also believed that the plan would in the long run provide better payment to medical vendors because the picture of what was paid for and what was not paid for would be specific, and would be uniform throughout the state.

By this time the State Department of Social Welfare was in the throes of developing its budget for the next fiscal year, and the matter of executive clearance for the medical program expenditures emerged. This clearance was granted at the traditional $6.50 formulary amount. Since all of the discussions with the medical vendors had been at the $8.50 level, the staff again held a series of meetings with vendors of medical service. In our discussion with informal representatives of the hospital administrators association there was tentative acceptance of the program of scope limitation at the traditional $6.50 figure and a strong indication from this group of people that despite the fact this program would mean a decrease in the amount of money they would receive for medical services to assistance eligibles, they still felt that in the long run a better and more consistent medical program would result. This was also true in connection with the meeting of the staff of the department of social welfare with informal representatives from the Kansas Pharmaceutical Association. To date no definitive action has been taken by the Kansas Medical Society.

One meeting has been held with the Executive Secretary and three members of the Shawnee Medical Society, who are also members of the State Society. The consensus of these representatives was in opposition to the evolution of a state plan at this level of expenditure and was in favor of a continuation of the present program of permitting each local association to bargain with the local social welfare board and for the state department to continue to permit the expenditure of available county funds above and beyond the $6.50 amount in which the state presently participates. The State Department of Social Welfare will meet with the Executive Committee of the Kansas Medical Society in the near future in the hope that it will eventually obtain approval of the development of a method of controlling medical costs to the appropriation in a particular year for this purpose, since we feel it is only the medical profession which can effectively control the most expensive part of medical services which is that of hospitalization. This presently is where we stand on the development of a medical program.

BACK THE ATTACK On Traffic Accidents WITH THESE SPEED RULES

- Drive at a speed that will enable you to stop in the assured clear distance ahead.
- Slow down before you get to curves and intersections.
- At night, drive at the speed which will let you stop within your headlight range.
- Drive with traffic. You are probably going too fast if you are passing many cars—too slow if many are passing you. Where children are playing, be able to stop in a car length or less.
- When you're tired or inattentive, stop.

The Business Side of Medicine

The Short Term Trust

FLOYD F. WEHRENBERG, ***Kansas City, Missouri***

The Short Term Living Trust offers substantial tax-saving opportunities for the professional man today, but it is neglected due to lack of knowledge of its functions.

Meets Financial Needs

The most reasonable use for such a trust is to meet the financial needs of a personal nondeductible nature for dependents. Of these, education of children and support of relatives are most common.

There are several advantages to such a trust. First, it provides for a planned accumulation of funds to meet your needs without imposing a financial hardship upon you when those needs materialize. When the short term trust is set up, specific provision is made for the availability of comparatively large sums of money through systematic accumulation over a period of years. Second, through use of the short term trust you make yourself eligible for substantial tax savings. The reduction in income tax adds to the accumulation of your trust.

Following is an illustration of the tax saving feature. Assume that Doctor A is in a 47 per cent tax bracket and has three children for whom he is expecting to spend $12,000 for education. He owns no other real estate and has no securities, however he does own a medical building valued at $16,000. The doctor's oldest child is eight years of age and a short term living trust must be of at least 10 years duration. To accumulate a minimum of $12,000 over the 10-year period will necessitate payments to the trust which will provide $100 monthly net profit. Depreciation to the trust will be $50 monthly and taxes on the building will be $10 per month, making a total monthly payment to the trust of $160.

The Annual Accumulation

The annual accumulation of $1,200 will accrue to each of the three children at the rate of $400. Since Doctor A has leased the building from the trust, the $1,200 annually is a deductible expense and results in an annual tax saving to the doctor in the amount of $564, or $5,640 over the 10-year period. The overall results of this trust is that 12,000 has been accumulated in the trust with $6,360 of the doctor's funds and $5,640 of tax savings. Annual investment returns on the $1,200 will accrue to the trust, increasing the amount available for education at the same ratio of tax savings. At the end of the 10-year period, the building and depreciation reserves will revert to Doctor A and the trust will cease to function.

Does It Meet the Two Major Requirements?

There are two major requirements in the short term trust: it must be created for a minimum period of 10 years and it must be irrevocable. The Trust Agreements and related instruments should be handled by an attorney experienced in this field, for although the trust is relatively simple, if it is not properly qualified it could result in loss of the tax advantage.

Certainly the short term trust is not the answer to all financial problems, however it has wide use and acceptance and may fit well into your financial program. Certainly it is worth considering.

Mr. Wehrenberg is Missouri-Kansas manager, Professional Management Midwest, 4010 Washington Street, Kansas City, Missouri.

Washington HIGHLIGHTS

This summary of Washington news is prepared by the A.M.A. Washington Office for distribution to state medical journals.

The Social Security Outlook for 1960

Congress embarked on a crucial election year session with expansion of the Social Security program shaping up as one of the major issues.

It was virtually a foregone conclusion that some liberalization of the program would be voted in the Democratic-controlled Congress, but the key question was how far the changes would go. In every Presidential election year during recent years, the House and Senate have approved a broadening of the program.

One of the prime reasons Social Security has been an election year "favorite" is that the program can be boosted without affecting the Federal budget. This is because it is financed through employer-employe contributions and is theoretically self-supporting.

Of special interest to physicians, of course, is the fate of the so-called Forand bill that would provide hospitalization, surgical services, and nursing home care for Social Security beneficiaries. This would be accomplished through even higher taxes on employes and employers than now scheduled through already-voted step increases.

Supporters of the controversial legislation—vigorously opposed by the Administration, the American Medical Association, and allied organizations—launched their move to win enactment this session.

MCNAMARA HEARINGS

Sen. Pat McNamara (D., Mich.), whose Senate Subcommittee on Aging held a series of hearings across the country during the recess, announced at the conclusion of the hearings that they showed a need for expanding Social Security to include health care for the aged. He indicated he thought the Forand bill did not go far enough.

A battery of speakers at a meeting here of the American Public Welfare Association also urged a sharp increase in benefits, with some advocating "cradle to grave" security for all.

Not all of the proposals for extending the program involved health care.

The Administration indicated it would recommend some expansion, especially in the disability program under which the Federal government helps the states provide assistance to persons over age 50 judged to be totally and permanently disabled. An influential lawmaker, Rep. Burr Harrison (D., Va.), disclosed that he would introduce legislation to remove the age 50 limitation to allow all persons regardless of age to participate. He estimated this would not require any hiking of the taxes. Rep. Harrison is Chairman of a House Ways and Means Subcommittee that held recess hearings on administration of the disability program.

Meanwhile, Chairman Wilbur Mills (D., Ark.) of the full Ways and Means Committee cleared the way for full-scale hearings this Congressional session on the entire issue of Social Security. In listing specific phases to be considered, however, the lawmaker did not mention the Forand proposal.

TV Should Clean House

A spokesman for the American Medical Association told the Federal Communications Commission that the AMA believes the best solution to objectionable advertising and programs on television and radio is for the industry "to clean its own house."

Dr. Eugene F. Hoffman, co-chairman of the AMA's Physician's Advisory Committee on Television, Radio and Motion Pictures, declared "the medical profession . . . stands ready to assist the networks and individual stations in determining accuracy and good taste of broadcast material involving health or medicine—either commercial or public service."

The familiar Treasury advice: "Save for your children's education with U. S. Savings Bonds" is better advice than ever, since Series E and H bond purchases now earn 3¾ per cent, if held to maturity.

When you invest in U. S. Savings Bonds, you are buying a security guaranteed against loss of principal or interest from any cause.

A.M.A. Thirteenth Clinical Meeting

Reports on Actions of the House of Delegates

Over 5,000 persons registered for the four day session of the 13th Clinical Meeting of the American Medical Association held in Dallas, December 1-4. Registration figures through Thursday, with still a half a day remaining, revealed 2,742 physicians attending.

Kansas was represented officially by its two delegates, Drs. G. F. Gsell and L. R. Pyle; Drs. C. V. Black and N. L. Francis, alternate delegates; and Dr. G. R. Peters, president. Many other physicians from Kansas attended the clinical sessions and House of Delegates meetings.

Among the major subjects acted upon by the House of Delegates at the session were relations between physicians and hospitals, freedom of choice of physician, a scholarship program for deserving medical students, and relative value students of medical service.

Speaking at the Tuesday opening session of the House, Dr. Louis M. Orr of Orlando, Florida, and the President of the A.M.A., urged the nation's physicians to take a more active interest in the whole area of politics, public affairs, and community life. Dr. Orr also asked physicians and medical societies to do a more effective job of telling medicine's positive story, adding that "if more people knew more about the things we support and encourage, they would listen to us much more carefully about those occasional things that we oppose."

Two nationally known political leaders from Texas also addressed the group. They were Speaker of the U. S. House of Representatives Sam Rayburn and Senator Lyndon B. Johnson, majority leader in the Senate. Rayburn urged greater attention to the task of educating young people in the principles of American government and giving them a desire to perpetuate it. Johnson called for a "politics of unity" which will enable Americans to exert strength and determination in an effort to create a world in which all men can be free.

Dr. Chesley M. Martin of Elgin, Oklahoma, was named as the 1959 General Practitioner of the Year for his outstanding contributions to the health and civic affairs of his home community.

Physician-Hospital Relations

The House received 12 resolutions on the subject of relationships between physicians and hospitals. To resolve any doubt about its position, the House did not act upon any of the resolutions but instead reaffirmed the 1951 "Guides for Conduct of Physicians in Relationships With Institutions." It also declared that "all subsequent or inconsistent actions are considered superseded."

The House also accepted recommendations that (1) the House of Delegates acknowledge the need to strengthen relationships with hospitals by action at state and local levels, (2) the Board of Trustees of the Association continue to maintain liaison with the Board of Trustees of the American Hospital Association, and (3) the Council on Medical Service review this entire problem to accertain if there have been actions inconsistent with the 1951 Guides.

Those Guides summarize the following general principles as a basis for adjusting controversies:

"1. A physician should not dispose of his professional attainments or services to any hospital, corporation or lay body by whatever name called or however organized under terms or conditions which permit the sale of the services of that physician by such agency for a fee.

"2. Where a hospital is not selling the services of a physician, the financial arrangement if any between the hospital and the physican properly may be placed on any mutually satisfactory basis. This refers to the remuneration of a physician for teaching or research or charitable services or the like. Corporations or other lay bodies properly may provide such services and employ or otherwise engage doctors for those purposes.

"3. The practice of anesthesiology, pathology, physical medicine and radiology are an integral part of the practice of medicine in the same category as the practice of surgery, internal medicine or any other designated field of medicine."

Freedom of Choice

In considering four resolutions which in various ways would have changed or replaced the statements on freedom of choice of physician which the House adopted in June, 1959, when acting upon the recommendations in the report of the Commission on Medical Care Plans, the House reaffirmed the following two statements approved in Atlantic City:

1. "The American Medical Association believes that free choice of physician is the right of every individual and one which he should be free to exercise as he chooses."

2. "Each individual should be accorded the privilege to select and change his physician at will of to select his preferred system of medical care, and the American Medical Association vigorously supports

the right of the individual to choose between these alternatives."

However, in order to clarify and strengthen its position on the issue of freedom of choice of physician, the House also adopted this additional statement which was submitted as a substitute amendment on the floor of the House:

3. "Lest there be any misinterpretation, we state unequivocally that the American Medical Association firmly subscribes to freedom of choice of physician and free competition among physicians as being prerequisites to optimal medical care. The benefits of any system which provides medical care must be judged on the degree to which it allows of, or abridges, such freedom of choice and such competition."

Scholarship Program

To help meet the need for an increasing number of physicians in the future, the House approved the creation of a special study committee which was asked to:

1. Present a scholarship program, its development, administration and the role of the American Medical Association in fulfilling it.

2. Ascertain the maximum to which medical schools could expand their student bodies while maintaining the quality of medical education.

3. Ascertain what universities can support new medical schools with qualified students and sufficient clinical material for teaching—either on a two year or a full four year basis.

4. Investigate the securing of competent medical faculties.

5. Investigate financing of expansion and establishment of medical schools.

6. Investigate financing of medical education as to the most economical methods of obtaining high quality medical training.

7. Develop methods of getting well-qualified students to undertake the study of medicine.

8. Investigate the possibility of relaxing rigid geographic restrictions on the admission of students to medical schools.

The House urged that the special committee be implemented promptly with adequate funds and staff so that it may make an initial report by June, 1960.

Relative Value Studies

Reaffirming a previous policy statement, the House approved in principle the conducting of relative value studies by each state medical society, rather than a nationwide study or a series of regional studies by the A.M.A. The House also reiterated its authorization for the Committee on Medical Practices to inform each state medical association, through regional or other meetings, of the purpose, scope and objectives of such studies, the steps to be followed in conducting studies, the problems which may be encountered and the manner in which the results can be applied.

The House recognized, however, that some state medical societies are either not interested in relative value studies or are actively opposed to them. It pointed out that some state medical associations fear that the regional conferences of the Committee on Medical Practices will put pressure on them to carry out such studies and that this will result in the adoption of "fixed fees."

Since the regional conferences are educational in nature, the House said, it remains for each state or county medical asociation to accept or reject the idea of a study in its area.

The House expressed awareness of the fact that this is still a controversial matter. However, it commended the Committee on Medical Practices for its effort to carry out the instructions of the House, and it urged the committee to continue its educational work.

Miscellaneous Actions

In considering 44 resolutions and a large volume of annual, supplementary and special reports, the House also:

Learned that the A.M.A. Board of Trustees has appointed a liaison committee to meet with a similar committee of the *American Osteopathic Association* to consider matters of common concern;

Emphasized that local medical societies should insure that no member violates ethical traditions as they relate to ownership of *pharmacies* or stock in pharmaceutical companies;

Approved the plan of the Committee on Medical Rating of Physical Impairment to publish its new guide on the *cardiovascular system* in the *A.M.A. Journal;*

Recommended that Association councils and committees, whenever feasible, hold their meetings in the remodeled *Chicago headquarters;*

Called for investigation of the need, desirablity and feasibility of establishing a home for *aged and retired physicians;*

Commended *Dr. F. S. Crockett,* retiring chairman of the Council on Rural Health, for his many years of devoted duty;

Urged active promotion and careful study of the newly developed "Guides for Medical Care in *Nursing Homes* and Related Facilities";

Suggested that fees for consultative examinations under programs of the *Bureau of Old Age and Survivors Insurance* should be adjudicated directly between the state medical society and the state agency involved;

Registered a strong protest to the *Veterans Administration,* urging stricter screening of non-service-connected disability patients admitted to government hospitals;

Reiterated the Association's support of the *Blue Shield* concept and directed the Council on Medical Service to submit at the June, 1960, meeting its recommendations concerning a policy statement on A.M.A. relationship with Blue Shield plans;

Suggested that S. J. Res. 41, a bill which would institute a separate program of *international medical research*, be delayed until an over-all assessment can be made of proposals now before Congress dealing with domestic and international medical research;

Endorsed the program of the Educational Council for *Foreign Medical Graduates* but also urged that judicious consideration be given to local problems involved in the July 1, 1960, deadline for certification of foreign graduates;

Urged that *medical schools* include in their curricula a course on the social, political and economic aspects of medicine;

Declared that the threat of *nuclear warfare* has imposed a tremendous responsibility on the medical profession, which must be prepared to assume a critically important role in such an event;

Suggested that the A.M.A. make available to school libraries *information and literature* showing the advantages of private medical care and the American free enterprise system;

Stated that examinations to determine the physical and mental fitness of *aircraft crew members* should be made by doctors of medicine with special knowledge and proficiency in certain techniques;

Urged the American people to get proper *tetanus toxoid*, original and booster, and other immunizations as indicated from their physicians, and called on A.M.A. members to cooperate in an educational program on tetanus immunization;

Recommended that all state and country medical societies establish programs for the inspection and testing of all *fluoroscopes and radiographic equipment;*

Approved the Speaker's proposal that the opening session of the House, at the *Interim Meeting*, be moved from Tuesday morning to Monday morning, with the reference committees meeting on Tuesday and the House reconvening on Wednesday afternoon;

Called upon each individual physician to wage "a vigorous, dynamic and uncompromising fight" against the *Forand type of legislation;*

Urged state and local medical societies and individual physicians to implement the A.M.A. program for recruitment of high-grade *medical students;*

Changed the title of the Section on Surgery, General and Abdominal, to the Section on *General Surgery;*

Accepted with appreciation a $2,500 contribution by Smith, Kline and French Laboratories toward establishment of a suitable award honoring the name of *Dr. Thomas G. Hull,* retiring secretary of the Council on Scientific Assembly, and

Reaffirmed the "Suggested Guides to Relations Between Medical Societies and *Voluntary Health Agencies,*" which were adopted at the December, 1957, meeting in Philadelphia.

At the Tuesday opening session, six state medical societies presented nearly $250,000 to the American Medical Education Foundation. The checks turned over to Dr. George F. Lull, president of AMEF, were: California, $156,562; Indiana, $35,570; New York, $19,546; Utah, $10,355; New Jersey, $10,000, and Arizona, $9,263.

PREPARATION OF MANUSCRIPTS FOR THE JOURNAL

Exclusive Publication: Articles are accepted for publication on condition that they are contributed solely to this Journal. Publication elsewhere will be subsequently authorized in the discretion of the Editor.

Correspondence: Address all correspondence relating to publication of scientific papers to the Managing Editor.

Manuscript: Type double spaced, on white paper, 8½ by 11, with one-inch margins at the top, bottom, and right, and 1½ inches on the left. Submit the original. Call drugs by their generic names. The trade names can be added, in parenthesis, if they are considered important. Keep one copy of the paper.

Footnotes and References: Use the style of the *Quarterly Cumulative Index Medicus* published by the American Medical Association, which requires, in the order given: name of author, title of article, name of periodical, with volume, pages, month—day of month if weekly—and year as follows:

4. Doe, J. E., What I Know About It, J. Kans. M. S. 54:717-719 (Dec.) 1954.

Include only those references specifically referred to in the text.

Reprints: An order slip for reprints with a table covering cost will be sent with the galley proof to each contributor.

Illustrations: A reasonable number of illustrations are allowed without cost to the author. Place the name of the author on the back of each illustration, table, etc. Submit clear and distinct, glossy photographs. Make drawings in black ink on white paper. Attach a slip of paper to the bottom of the illustration with the author's name, identification of article, and appropriate legend. Identify the top of the illustration. Photographs and drawings will be returned if so requested.

Under ordinary circumstances articles are scheduled several months in advance. Notice will be given the contributor when the article has been accepted and again before publication.

Society members throughout the state are encouraged to write up their interesting cases and submit them for publication. The editorial staff welcomes the opportunity of helping you prepare your article for the printer.

KMS Obituaries

M. P. BALLARD, M.D.

Dr. M. P. Ballard, 50, of Delphos, a practicing physician in Delphos, Concordia, and Glasco communities, was fatally injured in a three-car accident near Concordia on the evening of November 20.

Doctor Ballard was former health officer of Ottawa County. He has been practicing in the area for over 20 years and was on the staff of the St. Joseph Hospital where he passed away.

Doctor Ballard was a native of Miltonvale. Among his survivors are his wife, Mrs. Dorothy Ballard, and two sons, Rodney, 16, and Marshall, 22, who is a student at Emporia State College. Doctor Ballard was born in 1908 and received his medical degree from the University of Kansas Medical School in 1936. He joined the Kansas Medical Society in 1939. He was a member of the Cloud County Medical Society.

CHARLES J. BLISS, M.D.

Dr. Charles J. Bliss, 78, of Perry, veteran Jefferson County physician, died November 19 in a Topeka hospital.

Doctor Bliss was born January 16, 1881, in Oskaloosa, and was a graduate of the University of Kansas Medical School. After his graduation, he went to Mayetta where he practiced medicine five years until he was called into the army as a lieutenant in the medical corps. He saw service overseas.

After his discharge from the service, he opened an office in Perry and for many years, he had a wide practice over most of Jefferson County. A few years ago, the Perry community honored him with a celebration. Among those present were many whom he had ushered into the world.

He was a member of the Perry Methodist Church, the Masonic Lodge, Perry American Legion Post, and the Jefferson County Medical Society.

Among his survivors are his wife, Mrs. Zellah Bliss, two daughters, a son, and three sisters. Doctor Bliss became a member of the Kansas Medical Society in 1933. His specialty was gynecology.

JOHN T. SWANSON, M.D.

Dr. John T. Swanson, 80, a practicing physician and radiologist in Kansas and Missouri for over 51 years, died at his home in Independence, Kansas, November 16.

Doctor Swanson graduated from the Kansas University School of Medicine in 1908 and practiced in Kansas City until 1930, when he moved to Independence. He practiced in Colby, Kansas, from 1952 until his retirement in 1957, then returned to Independence.

He was a member of the Montgomery County and Thomas County Medical Societies. Doctor Swanson was a Fellow in the American College of Radiology and was a Board member of the Radiological Society of North America. Doctor Swanson was also affiliated with the Kansas Medical Society since 1937. Among his survivors are his wife and three brothers.

J. G. N. SOANES, M.D.

Dr. J. G. N. Soanes, 84 year old physician, surgeon, and a long-time prominent civic leader in business and political affairs in Kansas City, Kansas passed away November 4, in Kansas City.

Doctor Soanes graduated from Howard University Medical School, in Washington, D. C., in 1901. That same year he came to Kansas to begin his practice. He was a member of the Wyandotte County Medical Society and a member of the Kansas Medical Society since 1933. He was born in 1874.

Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. *Notice of the session is posted in advance to allow the physician time to make preparations.*

The next scheduled examinations (Part II), oral and clinical, for all candidates, will be conducted at the Edgewater Beach Hotel, Chicago, Illinois, by the entire Board from April 11 through 16, 1960. Formal notice of the exact time of each candidate's examination will be sent him in advance of the examination dates.

Candidates who participated in the Part I examinations will be notified of their eligibility for the Part II examinations as soon as possible.

Current Bulletins of the American Board of Obstetrics and Gynecology, outlining the requirements for application, may be obtained by writing to the Secretary: Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

American College of Allergists Graduate Instructional Course and Annual Congress, February 28 to March 4, 1960, The Americana Hotel, Bal Harbour, Miami Beach, Florida. For information contact, John D. Gillaspie, M.D., Treasurer, 2049 Broadway, Boulder, Colorado.

The University of Texas, M. D. Anderson Hospital and Tumor Institute announces its Fourteenth Annual Symposium on Fundamental Cancer Research. The title of this year's symposium will be, "Cell Physiology of Neoplasia." The meeting will be held February 25-27, at the University of Texas in Austin.

Plans are now being made for three days of scientific sessions at the Annual Meeting of the National Tuberculosis Association next May in Los Angeles, Calif. The scientific sessions will be sponsored by the NTA's medical section, the American Trudeau Society, and will be held May 16, 17, and 18, 1960.

The ATS meetings will be held in conjunction with the Annual Meeting of the NTA, which will open May 16 and extend through May 19. Public health sessions will be held concurrently with the medical sessions. Scientific exhibits will be on display throughout the meeting. The Statler-Hilton and the Biltmore will be headquarters hotels.

Papers will be selected from abstracts submitted to the program committee not later than January 7, 1960. Abstracts should be sent to David W. Cugell, M.D., chairman of the Medical Sessions Committee, American Trudeau Society, 1790 Broadway, New York 19, N. Y.

In addition to sessions at which papers will be presented, there will be five panel discussions and seven luncheon seminars.

John W. Kirklin, M.D., Associate in Surgery at the Mayo Foundation, Rochester, Minnesota, will discuss recent experience in open heart surgery on the evening of Wednesday, January 20 at the University of Kansas Medical Center. This first annual lecture sponsored by the Kaw Valley Heart Association will be presented in conjunction with the Postgraduate Course THE HEART: RHEUMATIC AND CONGENITAL DISEASE, January 18 to 22 inclusive. Dr. Kirklin will speak at 8:00 p.m. in the Battenfeld Auditorium of the Medical Center, in Kansas City, Kansas.

One of the pioneer developers in the field of heart-lung machines, Dr. Kirklin's contribution to surgery of the heart and lungs has been fundamental and outstanding. He has contributed many papers to the scientific literature.

All members of the medical and nursing professions are cordially invited to hear Dr. Kirklin. Dr. Kirklin will be introduced by Dr. William H. Algie of Kansas City, Kansas, Chairman of the Board of Directors of the Kaw Valley Heart Association.

We wish to announce that the Council on Postgraduate Medical Education of the American College of Chest Physicians will present the 13th Annual Postgraduate Course on Diseases of the Chest at the Sheraton Hotel, Philadelphia, March 14-18, 1960.

The most recent advances in the diagnosis and treatment of heart and lung diseases, medical and surgical aspects, will be presented. A copy of the program is enclosed. Tuition for this five-day course will be $100, including round table luncheon discussions.

Further information may be obtained by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

The 24th Annual Session of the International Medical Assembly of Southwest Texas will be held in San Antonio, Texas, January 25-27, 1960 at the Hilton Hotel. There will be 17 speakers.

In addition to the scientific program, there will be many social events for the physician and wife. Those interested in receiving further information or in registering may write Dr. A. O. Severance, President, or Mr. S. E. Cockrell, Jr., Executive Secretary, 202 West French Place, San Antonio 12, Texas.

The International Academy of Proctology announces its Annual Cash Prize and Certificate of Merit Award Contest for 1959-1960. The best unpublished contribution on proctology or allied subjects will be awarded $100 and a Certificate of Merit. The winning contribution will be selected by a Board of impartial judges, and all decisions are final.

The formal award of the First Prize, and presentation of other Certificates, will be made at the Annual Convention Dinner Dance of the International Academy of Proctology, April 27, 1960, at the Americana Hotel, Miami Beach, Florida.

The International Academy of Proctology reserves the exclusive right to publish all contributions in its official publication, *The American Journal of Proctology*. All entries are limited to 5,000 words, must be typewritten in English, and submitted in five copies. All entries must be received no later than the first day of February, 1960. Entries should be addressed to: Alfred J. Cantor, M.D., Executive Officer, International Academy of Proctology, 147-41 Sanford Avenue, Flushing 55, New York.

A program on adrenal steroids has been developed for the Third Annual Oklahoma Colloquy on Advances in Medicine to be held March 24-26 at the University of Oklahoma Medical Center, Oklahoma City. Fifteen guest lecturers and 13 members of the Medical Center faculty will participate.

Scientific papers will cover clinical application of the steroids in endocrinology, infectious diseases, gastroenterology, rheumatic disease, hematological diseases (including the leukemias and immunohematological disorders), neoplastic, collagen, renal, and allergic diseases. Others will deal with the basic physiological and biochemical aspects of adrenal steroids. The pharmacology and side effects also will be discussed. In addition to the general sessions, special interest meetings are planned in the fields of medicine, pediatrics, surgery, and basic science.

A.M.A. and Your Kansas Traffic and Safety Department Lists the Following Driver Fitness Rules

Some of the things that makes a driver dangerous are:

Emotional Upsets. Unless a person can keep his mind on the wheel and not on his worries, he should not take the wheel.

The Driver's Attitude. Some drivers feel the other fellow is always wrong. Some are aggressive and intolerant when they get into a car. They need to be mature.

Sleepiness. A sleepy driver is as much a hazard as a drinking one. Dozing is not restricted to night driving. When making long trips, a person should rest every two hours, drinking coffee or cola to stay alert. He should not take any medicine that makes him drowsy.

Medicines. Antihistamines, cold tablets, sedatives, tranquilizers, and some other drugs may dull reflexes or impair coordination. Stimulants may make a person nervous. The doctor should be consulted about the side effects of any drugs.

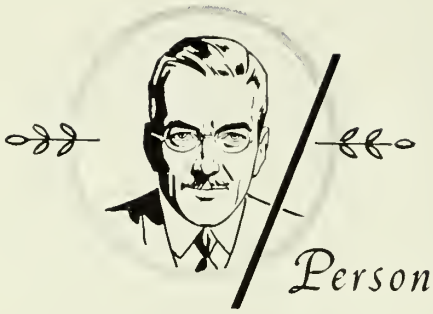
Faulty Vision. A driver needs regular eye examinations; if he notices any change in his eyes between examinations, he should see his doctor immediately. To reduce eye strain he should wear properly fitted sunglasses, but not after dark. To avoid tiring the eyes, excessive night driving should be avoided if possible. Hay fever or the common cold can blur the vision dangerously.

Certain Nerve and Heart Disorders. Some may cause convulsions and others may result in occasional loss of consciousness. The doctor is the best judge of whether a patient with these disorders should drive.

Diabetes. Insulin reactions may cause difficulties, but diabetic patients who follow their doctor's advice can be safe drivers.

Old Age. After 65, reflexes and coordination tend to be a little slower, people tire more easily, resistance to glare is lessened, and the ability to see at night is declining. Older drivers should schedule their trips at non-rush hours and should not spend long periods at the wheel.

And, of Course, Drinking. Never drink and drive.



Personalities—IN KANSAS MEDICINE

Dr. F. I. Stuart, Atchison physician, was honored by the Atchison County Medical Society with a dinner at the Bellevue Country Club recently, for 50 years of practice. Over 25 of these years he spent in Atchison. He began practicing in Wagner, South Dakota, and practiced in Independence, Missouri, and then came to Atchison in 1935. Doctor Stuart was presented a gold wrist watch by the Society.

The decision of **Dr. E. Grey Dimond** to continue his research in California was recently announced by the University of Kansas Medical School. Doctor Dimond, while only 40 years old, has established a national reputation in heart and blood vessel research.

The work of cardiovascular laboratory he has developed in Kansas City has received widespread attention, and his postgraduate lectures have attracted doctors from many states.

Dr. Perry A. Loyd's fifty years of medical service were recently honored in Salina.

The Saline County Medical Society held a dinner dance in his honor at the Salina Country Club.

Doctor Loyd has been a physician in Salina since 1918. **Dr. L. S. Nelson, Sr.,** was the master of ceremonies at the dinner. Doctor Loyd is an eye, ear, and nose specialist and began his medical career as a general practitioner in Healy. He is 78 years old. Doctor Loyd was also a farmer and teacher before deciding on the career of medicine.

Dr. Richard P. Schellinger was elected the 1960 president of the medical staff of the Newman Memorial County Hospital at a meeting held in Emporia recently. **Dr. L. F. McKee** was elected vice-president; Dr. M. D. Snowbarger, secretary; **Drs. J. L. Morgan, T. P. Butcher,** and **D. L. Traylor,** executive committee; and **Dr. J. J. Hovorka,** medical staff representative, on the Tissue Committee.

Dr. John D. Hunter, Fort Scott, recently retired from practice in Bourdon County. He came to Fort Scott as a pharmacist in 1897, in the Hunter Drug Store. After four years' work as a pharmacist, Doctor Hunter enrolled in the University of Kansas Medical School in Kansas City in 1900. He graduated in 1905 and practiced two years in Kansas City before locating again in Fort Scott. His specialty was EENT. He was one of the 240 doctors cited as still in active practice after more than 50 years of service.

Dr. H. Alden Flanders, Hays, director of the Rehabilitation Center at Hadley Memorial Hospital, was among the 14 persons appointed as chairmen of subcommittees of the Citizens Committee which will study problems related to the aging population of Kansas.

Doctor Flanders is to act as chairman of the Rehabilitation Committee.

Each subcommittee is to study a specific area of aging problem in Kansas, ranging from health, medical care, and research, to leisure time activities.

Dr. C. Frederick Kittle, associate professor of surgery, at the University of Kansas Medical Center, and chairman of the Medical Center Advisory Committee of the Kaw Valley Heart Association, presented a new film on Heart Surgery at the 1959 scientific sessions and meetings of the American Heart Association recently. Over 3,000 physicians from all over the country attended the scientific sessions in addition to lay leaders. Doctor Kittle presented this film at the annual meeting of the American College of Surgeons in the same month, and received their citation of merit.

The film presented by Doctor Kittle is entitled, "Myxomas of the Heart," and was made recently with **Drs. Don R. Miller, Theodore Batchelder, James E. Crockett,** and **David S. Ruhe.**

Doctor Kittle lectured on October 30 to registered nurses attending the annual Postgraduate Course In Cardiovascular Nursing at the University at the University of Kansas Medical Center. This course is aided by grants from the Kaw Valley Heart Association.

Dr. Robert Wallerstein and **Dr. Herbert Modlin,** Topeka, attended the meeting of the group for the achievement of psychiatry in New York in November.

Dr. Herbert Klemmer, Topeka, attended the American Psychiatric Association meeting in Detroit and the Association of American Medical Colleges in Chicago in November.

Dr. Joseph Stein attended a meeting of the Central Electroencephalographic Society in Chicago recently.

Dr. Richard Tozer, Topeka, attended the Congress of Neurological Surgeons at Miami Beach, Florida, the first of November.

NEW MEMBERS

The JOURNAL *takes this opportunity to welcome these new members into the Kansas Medical Society.*

Arthur C. Cherry, M.D.
10th & Fillmore
Topeka, Kansas

Antoine S. Grayib, M.D.
Santa Fe Hospital
Topeka, Kansas

Arthur W. Hoyt, M.D.
1256 Western
Topeka, Kansas

JoAnn Myers, M.D.
Topeka State Hospital
Topeka, Kansas

William H. Zimmerman, M.D.
Topeka State Hospital
Topeka, Kansas

Jesus Christ was born in a stable; He was obliged to fly into Egypt; thirty years of His life were spent in a workshop; He suffered hunger, thirst and weariness; He was poor, despised; and miserable; He taught the doctrines of heaven, and no one would listen. The great and the wise persecuted and took Him, subjected Him to frightful torments, treated Him as a slave, and put Him to death between two malefactors, having preferred to give liberty to a robber, rather than to suffer Him to escape. Such was the life which our Lord chose; while we are horrified at any kind of humiliation, and cannot bear the slightest appearance of contempt.—*Fénelon*

Rise in Hospital Costs—Say Doctors' Bills Will Hold Steady

The next few years will see hospital costs soaring, doctors' fees holding steady, and medical insurance growing until just about all of us are covered for every kind of illness and accident. These predictions, based on extensive interviews with U. S. health officials and physicians, were made today by *Life* magazine in the concluding article of its four part series on the American doctor.

The magazine said that it is probably impossible to reduce the costs of running a hospital but that experts who have studied the problem of skyrocketing prices for hospital care are searching out new paths to efficiency.

In the 20 years from 1936 to 1956 the fees charged by surgeons rose by 60 per cent, those of general practitioners 73 per cent. Neither are considered out of line with general price rises. But during the same period, hospital room rates zoomed 265 per cent, faster than almost anything else the dollar can buy. In most hospitals today, a private room costs about $25 a day.

The study showed that hospital costs will continue to rise as the result of being forced, among other things, to pay employees better wages. The magazine pointed out that hospitals traditionally have been among the most relentless exploiters of unskilled labor, paying anywhere from $10 to $20 a week less than industry. A hospital strike in New York last spring uncovered the fact that many hospitals were paying their unskilled help weekly salaries of $33.

Two other reasons for bigger bills are the demands by patients for fancier, better decorated rooms, and the fact that nursing care, laboratory and other technical services, which used to take less than half the hospital dollar, today gobble up almost three-fourths of that dollar as new techniques and discoveries enlarge the opportunities for proper medical treatment.

Physician fees will probably remain steady, the magazine said. Doctors never had it so good as they do today. Thanks to a prosperous economy and the various insurance plans, they now collect more than 90 per cent of their bills, whereas once they were lucky to collect 75 per cent. Because their services are so popular, they have more patients than in former years. Yet they make fewer night calls and spend more weekends with their families.

It reports the experts as predicting continued growth of medical insurance plans until almost the entire citizenry is covered for almost every kind of treatment. The costs will rise as broader types of benefits are included, and this is expected to cause some widespread complaints from those who rebel against spending a sizable sum for protection against illnesses that may never occur.

Anesthesia for Infants and Children. Robert M. Smith, M.D. C. V. Mosby Co., St. Louis, 1959, 418 pages. Illustrated. Price $12.00.

This is an extremely well written book which purposely limits its detailed explanation of anesthesia procedures to the younger age group. It is written by a man who is obviously a practitioner of the art and science of anesthesia and who has learned many details by experience and exposure. I like especially his first chapter and, in particular, its concluding paragraph. I certainly agree that rapport with children is every bit as important—if not more so—as with adults. The book is well organized and very complete with its listing of reference material so that if one desires he may look up the original articles for more detail if he feels so inclined. This is not meant to imply that the book is short on detail as it certainly is not.

Every writer of a book in anesthesia runs the risk of being rapidly out-dated as many new mechanical developments are constantly improving our service. Also, the harvest of vast research is bearing fruit in increased knowledge of normal and abnormal physiology. Dr. Smith is to be highly commended for his service to the specialty.—*W. O. M.*

Current Medical References. P. J. Sanazaro, editor, Los Altos, Lange, 1959. 307 pages.

Current Medical References includes references selected from the field of clinical medicine over the last twenty years, with many very recent ones. The books and journals included are those which would be available in the average modern hospital library or through interlibrary loan. Many of the articles were selected because they offered a good list of references for further study. There is a very brief annotation for many of the entries and an indication of the number of references cited by them. For a quick reference or review article this could be a useful volume, especially if it is to be revised every two years as the publishers promise. The hurried student, intern, and physician might find it a good starting point for investigation or a quick brush up.

Do not look here for the very latest research information on a subject. This still requires careful digging in the medical indexes and abstracts. For one thing, no articles in foreign languages are included. But then, it would not be fair to criticize for something that is not promised and that could not be delivered in book form.—*E. L. K.*

Family Medical Encyclopedia. Dr. Justus J. Schifferes, Pocket Books, Inc., New York, 1959, pocketbook form. Price $.50. Illustrated.

Dr. Justus J. Schifferes' *Family Medical Encyclopedia* is an easily readable and accurate reference book which provides the answers to many of the questions that patients ask their doctors. It is arranged alphabetically, and illustrated freely. There are also paragraph explanations by Dr. Schifferes on such subjects as first aid, health insurance, the nervous system, heart disease, cancer, and other fields of current interest. The book is handy in its pocketbook form and its nominal cost of 50 cents makes it attractive to every patient.—*F. D. W.*

The Physician and the Law. Rowland H. Long, Appleton-Century-Crofts, Inc., New York, 1959. Price $5.95. 302 pages.

As the juries' verdicts and damage awards increase, so proportionally should the knowledge of the physician for the law. Many juries today are handing down judgements in the amounts of $200,000 and more. It is for the purpose of acquainting the physician with these liabilities and a working knowledge of the law as it pertains to him that Mr. Long has written this book. Another purpose of the book

LIBRARY

seems to be informing physicians of their rights and duties when they must appear in court as a witness. While the cases are built around technical information, the book is basic enough that it will surely be found on many medical lawyers' shelves.

Every physician is liable for malpractice suits in almost every act he performs in his profession. So this book is a must for every practitioner who is beginning practice and would be a tremendous asset for review purposes for the older doctor. The book is easily read and very interesting.—*D. A. L.*

BOOKS RECEIVED

ELEMENTARY STATISTICS WITH APPLICATIONS IN MEDICINE AND THE BIOLOGICAL SCIENCES—By Frederick C. Croxton, Ph.D. Price $1.95. Dover Publications, Inc., New York, 1959.

INSULIN TREATMENT IN PSYCHIATRY. Proceedings of the International Conference on the Insulin Treatment in Psychiatry held at the New York Academy of Medicine, Oct. 24-25, 1958. Edited by Max Rinkel, M.D., Boston, Mass., and Harold E. Himwich, M.D., Galesburg, Ill. Price $5.00. The Philosophical Library, Inc., New York. 1959.

SURGERY OF THE PROSTATE—By Henry M. Weyrauch, M.D., W. B. Saunders, Philadelphia, 1959, 535 pages, Price $15.00.

SYNOPSIS OF TREATMENT OF ANORECTAL DISEASES—By Stuart T. Ross, M.D., C. V. Mosby Co., St. Louis, 1959, 240 pages, Price $6.50.

WHAT NEXT DOCTOR PECK—By Joseph H. Peck, M.D., Prentice-Hall, Inc., New York, 1959, 209 pages, Price $3.50.

THE SURGEON AND THE CHILD—By Willis J. Potts, M.D., W. B. Saunders Co., Philadelphia, 1959, 225 pages, Illustrated, Price $7.50.

THE BIOLOGICAL, SOCIOLOGICAL, AND PSYCHOLOGICAL ASPECTS OF AGING—By Kurt Wolff, M.D., Charles C Thomas Co., Springfield, Ill., 1959, 95 pages, Price $3.75.

MOLECULES AND MENTAL HEALTH—By Frederic A. Gibbs, M.D., National Brain Research Foundation, J. B. Lippincott Co., Philadelphia, 190 pages, Price $4.75, 1959.

TEXTBOOK OF PEDIATRICS—By Waldo E. Nelson, M.D., D.Sc. Professor of Pediatrics, Temple University School of Medicine, with collaboration of 81 contributors, W. B. Saunders Co., Philadelphia, 1959, 1462 pages, 428 illustrations, Price $16.50.

THE MEANING OF POISON—By Lloyd G. Stephenson, M.D., Logan Clendening Lectures on the History & Philosophy of Medicine. Kansas University Press, Lawrence, 1959, 50 pages, Price $2.00.

CHLORPROPAMIDE & DIABETES MELLITUS—Edited by Martin G. Boldner, Conference Chairman. The New York Academy of Sciences, New York, 1959, 1,028 pages, Price $5.00.

THE KANSAS DOCTOR: A CENTURY OF PIONEERING—Edited by Thomas N. Bonner, University of Kansas Press, Lawrence, 1959, 293 pages, Price $5.00.

DISEASES OF METABOLISM—Edited by Garfield G. Duncan, M.D., W. B. Saunders Co., Philadelphia, 1959, 1,066 pages, Price $18.50.

A SHORT INTRODUCTION TO ANATOMY—Edited by Jacopo Berengario Da Carpi, The University of Chicago Press, 1959, 178 pages, Price $5.00.

Ownership: The Journal is a non-profit publication owned and published monthly by the Kansas Medical Society.

Subscription: A year's subscription to the Journal is included in membership in the Kansas Medical Society, with $2.00 of each member's dues apportioned to the Journal. Rates to others, except in foreign countries, $4.00 per year or 60c per copy.

Material: Scientific articles, editorials, and data of general interest are invited from all members. Articles are to be submitted on condition that they are contributed solely to this publication. A right is reserved to reject any material deemed unsatisfactory.

Manuscripts: Only manuscripts that are typewritten on one side, double spaced, and original copies can be accepted. Manuscripts will be returned upon request.

Advertising: All advertising contracts, and all copy from advertisers under contract are subject to approval of the editorial board. Copy should be received by the 15th of the month immediately preceding the month of publication.

BOSTON MEDICAL
FEB 19 1962

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Scientific
ARTICLES

Electric Shock Therapy

Anesthetic Agents Used Properly Remove Unpleasantness and Dangers

CORA DYCK, M.D., *and* **RAY T. PARMLEY, M.D.,** *Wichita*

The use of Sodium Pentothal and Succinylcholine eliminates much apprehension of the patient towards Electric Shock Therapy, and the convulsive contractions of muscle groups. With such potent agents, meticulous control by a trained anesthesiologist is desirable. If this is not available the individual who will have the responsibility should have specific instruction for this procedure. A detailed description of a successful plan of procedure is included.

THE USE OF MUSCLE relaxants during the administration of electric shock therapy has undeniably merited its overwhelming acceptance, and at the same time the avidity shown by the patient for the use of sodium pentothal immediately before the treatment is understandable. The use of these two drugs by the team made up of the anesthesiologist and the psychiatrist has removed most of the objections which arise to this treatment. From the standpoint of the physician, it eliminates the possibility of fractures and muscle tenderness due to severe convulsions throughout the organism, and at the same time it prevents the accumulation of fear with each succeeding treatment. Discussion of the technique follows.

From the point of view of the patient, the technique consists only of the introduction of a small gauge needle into an arm vein through which sodium pentothal is injected. Sleep comes on in a few seconds, the head band is placed upon the patient, and the electrical connections are secured. During this time succinylcholine is given, and as soon as complete muscle relaxation is noted by the anesthesiologist, the electrical impulse is activated. The patient awakens subsequently without any knowledge whatsoever of what is actually involved in the administration of electric shock therapy. There is no knowledge of the placement of the electrical connection and of the fitting of the head band prior to the electrical impulse. More important is the lack of the necessity of several attendants holding the patient down prior to the stimuli. In fact, none of the objectionable features formerly pointed out by individual patients are present when a hypnotic with a muscle relaxant is used.

The pharmacological action of each of these drugs is profound. However, when they are administered by the skilled individual who is familiar with their use, the whole picture often tends to become one of oversimplification, so that bystanders or occasional viewers are lulled into a false sense of security. It is essential that every member of the team fully understands the actions of these drugs.

What the Team Must Understand

First, in the consideration of sodium pentothal, one must understand that it is not an anesthetic and, when injected into the blood stream, much of it is taken almost instantly to the brain, where the loss of consciousness is produced. However, as the blood carries the pentothal from the brain to the muscles and other tissues of the body, the drug is absorbed there and the concentration in the brain rapidly drops. The dose given is approximately 250 milligrams (approximately four grains) and in the average adult without electric shock therapy would cause sleep for only five to eight minutes. If this amount were given over a longer period of time it would bring hardly more than drowsiness to the untreated patient; however, when it is injected over a period of four or five seconds, it causes profound sleep and, in some cases, fleeting respiratory paralysis through depression of the respiratory center.

The pharmacological action of succinylcholine, the muscle relaxant used, is a complicated one, but it will suffice to say here that it causes a block of the electrical impulse to the muscles which normally results in contractions. This takes place at the myoneural junction, and as long as this drug is present in a therapeutic dose, the striated muscles throughout the body are paralyzed. Obviously, if the dose is sufficient to bring about muscle relaxation and to prohibit contraction so that convulsions are avoided and fractures cannot occur, it simultaneously inhibits the muscles of respiration in an identical fashion. It therefore becomes shockingly clear to the clinician familiar with this technique that the profound action of these two drugs results in respiratory paralysis through depression of the respiratory center in the brain on the part of sodium pentothal and simultaneous paralysis of all muscles of respiration at their myoneural junction due to succinylcholine.

Respiration Dangers

Many of these patients not only cannot breathe for themselves, but it becomes pharmacologically difficult to stimulate respiration in them. No amount of electrical stimulation, no amount of respiratory stimulants, no time-honored procedure such as rectal dilation will suffice to move air into the alveoli and carry on oxygenation of the patient's tissues. As physicians we are all aware of the fact that it is no longer necessary for a patient to breathe subjectively to carry on oxygenation. All of us are familiar, not only through the medical literature but also through the lay press, with the cases of individuals who have lived in iron lungs for many years, cases which have a permanent respiratory problem which is similar to this temporary problem described here. Respiratory paralysis is then expected in most cases, and is of no concern whatsoever to those individuals who are skilled in the use of artificial respiration. Thousands of patients throughout the surgeries of the world daily undergo these same reactions from the combination of these two drugs. However, the use of the combination does necessitate a thorough knowledge of the oxygenation of the body tissues in the absence of respiration on the part of the patient. With this knowledge, these drugs can be utilized quite easily and only minimal changes in the patient's blood pressure and cardiac action are observed.

The organism must not be deprived of its normal amount of oxygen, nor should it be reduced even temporarily. Oxygenation is accomplished by a thorough understanding of the art of resuscitation and the utilization of any number of devices on the market to resuscitate an oxygen-enriched atmosphere or pure oxygen into the patient's lungs. The least expensive method is to use a simple bag and mask. The bag acts as a reservoir for the oxygen which flows from the tanks and the mask makes possible a tight fit on the patient's face. Since this is used for a short time only and the flow of oxygen is high (eight to ten liters), there is no need for carbon dioxide absorption.

As soon as the patient has lost consciousness, the mask is placed on the face and the administration of oxygen takes place. After a period of 60 to 90 seconds the pharmacological action of succinylcholine has taken place, and the relaxation throughout the body is such that the chest can be expanded by gentle pressure on the bag and oxygen can be administered to the patient who is now in respiratory arrest. After the patient is well oxygenated, the electrical impulse is initiated and treatment is accomplished. Due to the relatively fleeting action of the pentothal and succinylcholine, subjective respiration is resumed on the part of the patient in two to four minutes. The oxygen mask is kept in place and the patient resuscitated until such time as he can resume spontaneous respiration. These patients are then watched and cared for in a routine manner until they regain all of their reflexes.

Eases Apprehension

Our technique is reported in detail in order to acquaint others with the procedure which has proved so satisfactory to both the psychiatrist and his patient. Originally this technique was worked out for poor risk patients or for patients in whom fractures were feared because of previous bone surgery or bone metastasis. There were also patients who refused further treatment because of apprehension and this technique was developed to reassure them. Its use

has now been accepted by both the psychiatrist and the patient and has been adopted as a routine.

Procedure

The procedure is as follows. The team is composed of the psychiatrist and anesthesiologist, four attendants (nurses, nurses' aides, or orderlies) to help position the patient and care for him in the usual manner by holding his shoulders, arms and legs. Equipment consists of syringes for the administration of sodium pentothal and succinylcholine separately, a source of oxygen with a bag and mask as pictured, one oral airway and the usual bite blocks provided by the department of psychiatric medicine. Treatment begins with the anesthesiologist and one nurse

entering the room and, after reassuring the patient, administering 150 to 350 milligrams of sodium pentothal five per cent solution, the amount depending upon the age, weight, and condition of the patient. The pentothal syringe is removed from the needle, which is left in the vein, and 20 to 40 milligrams of succinylcholine are administered from a syringe attached to the same needle, which may then be removed from the vein. The appointed member of the team and his assistant place the head band for the electrodes on the patient, the electrodes are put in position, and each person takes his place beside the patient while the psychiatrist and the anesthesiologist watch for depolarization (muscle fasiculation), which is the sign for the administration of the electric shock. In the meantime the anesthesiologist has, as soon as the needle is removed from the arm, placed the face piece on the patient and resuscitation is begun. Because the anesthesiologist is often the first to know through changes in the resistance of the patient's lungs to resuscitative measures, in addition to muscle fasiculation, that full relaxation has come about, it is at his signal that the electrical impulse is set off and electric shock is completed. The anesthesiologist holds the chin during the electric shock, just as the other members of the team hold the shoulders, legs and arms so that the patient is fully attended. If adequate amounts of succinylcholine have been given, the only signs of a convulsion may be a turning up of the big toes and a slight quiver of the chin muscles, this latter felt by the anesthesiologist's hand.

Resuscitation Should Be Continued

After the treatment is completed, resuscitation is continued for half a minute or a minute in order to be certain that no anoxia is present. The mask is then removed and time is given for the patient to regain his own respiration. This usually takes place within a period of two minutes but it should be pointed out that, unless resuscitation is stopped, the patient will often not regain his own respiration for five, 10 or even 15 minutes. This comes about because of hyperventilation through the resuscitation and the removal of so much carbon dioxide from the patient's blood that the respiratory center is not stimulated. If the patient is allowed to build up carbon dioxide, he will begin to breathe again as soon as the pentothal level drops in the brain and as soon as electrical conduction is regained at the myoneural junction. If these are not restored within two to three minutes, the patient is again resuscitated and afterward again allowed to regain his own respiration, and this is repeated at intervals until respiration is restored. It should again be pointed out that little concern need be felt over the fact that the patient is not breathing spontaneously at the end of the shock. When spontaneous respiration occurs, the patient is turned on his side and, after careful inspection of pulse and respiration, he is left in the care of a nurse while the team proceeds to the next room.

Conclusion

In conclusion, mention should be made that this technique is safe for the poor risk patient, one who has had bone surgery, or one in whom metastatic carcinoma to the bones is suspected. There is no need for post shock x-rays. The patient does not see the

equipment and does not dread the next shock. No muscle tenderness is experienced the following day and adequate protection is provided against accidents or anoxia. It should be made abundantly clear to those interested in the procedure, however, that while it is a simple one in the hands of those trained to carry it out, the profound action of these drugs demands a discipline on the part of those administering them far in excess of that demanded by other drugs ordinarily used in the physician's daily practice.

In areas where anesthetists or anesthesiologists are not available, it would be quite possible for this technique to be mastered by the psychiatrist. However, meticulous attention must be given to the care of the equipment, and an oxygen supply and other details must be attended to ritualistically. Some one person must take this responsibility. It cannot be left to the nurses on the floor or to others who can throw off responsibility by saying they had forgotten, or that they had intended to do thus and so. The profound pharmacological action of these drugs obviously removes the possibility of any alternative except adequate resuscitation. In areas where the need for this technique is present, the psychiatrist should approach the anesthesiologist on a consultant basis and work out the problem just as all other medical problems in a community are solved.

It is not sufficient for the anesthesiologist to limit his practice to the surgical floor; it should be clear to him that this type of anesthesia is also one of his community responsibilities. He must either take care of it himself or aid in the training of those who will be able to provide this service for the patient.

Department of Anesthesiology
St. Francis Hospital
Wichita 5, Kansas

Voluntary Check-Ups Reveal High Rate of Disease

Voluntary physical examinations uncovered a high rate of disease among the apparently healthy general population as well as a select group of business executives, separate studies showed today.

Both studies were published in the *Journal of the American Medical Association.*

Taken together they emphasize not only the value of periodic check-ups but the doctor's increasing concern with maintaining the health of the physically fit.

In the first study, 92 per cent of 10,709 apparently healthy persons given overall examinations at Tulane University School of Medicine, New Orleans, were found to have "disease or abnormalities of varying significance."

Much of the disease was in the early stages. Less than 1 per cent had malignancies, or serious disease.

The persons accepted for examination during a 12-year period from 1946-58 considered themselves well and had not been checked over by a doctor in the preceding six months. They represented all socio-economic levels and many occupations. The majority were between 30 and 49 years of age, and 75.5 per cent were women.

The type of examination was one that could be carried out in a doctor's office, the author of the article, Dr. Joseph E. Schenthal, pointed out.

Dr. Schenthal said the study was part of the current trend in medicine to find out more about the well person.

"With heart, vascular, and malignant diseases as leading causes of death, attention has been concentrated on the detection and treatment of these conditions early in the natural course of development," he said.

In the second study, 1,513 business executives underwent physical examinations and previously unrecognized diseases were discovered in 40 per cent.

The newly found disease "was believed capable of resulting, if unchecked, in death or major disability in over one-half" (57 per cent) of that number, the *Journal* article said.

"In one-third (34 per cent) it was judged capable of producing minor disability, while in the remaining 9 per cent the disease was judged insignificant.

"The high prevalence of potentially serious disease in members of the 'executive' category who are of favorable socio-economic and educational status makes it reasonable to expect an even higher prevalence of serious latent disease in the population at large."

Jejunogastric Intussusception

—Fortunately Not Common but a Serious Complication Of Gastrojejunal Anastomoses

JAMES SCOTT, M.D., ***Dwight, Illinois***

JEJUNOGASTRIC INTUSSUSCEPTION IS A major complication following gastroenterostomy or partial gastrectomy. It is unusual but by no means rare. Bozzi was credited with the first case report in 1914. In 1954, Palmer estimated the number of documented cases to be about 125 and he also compiled an extensive bibliography. His figures are well exceeded today.

The intussusception may occur in an anterograde or a retrograde manner, affecting either the afferent or the efferent loop or both. The retrograde type is by far the most common following simple gastroenterostomy and is the only kind ever observed following partial gastrectomy. In 1955, Smith was able to collect only 17 cases of jejunogastric intussusception following partial gastrectomy but the number of reported cases is rapidly increasing. The retrograde invagination was most frequently associated with the posterior Polya type anastomosis.

The mechanism of jejunogastric intussusception is poorly understood. It was never associated with a tumor or an ulcer, and functional factors like hypermotility, antiperistalsis, segmental spasm, and postoperative atony were blamed. Intussusception was observed with or without vagotomy. It was described in all age groups following gastroenterostomy. As a rule, it has appeared several years following operation but it was also observed in the early postoperative period. The length of the affected small intestine has ranged from a few centimeters to two meters.

Clinical Course

The clinical picture is that of a chronic, intermittent "stomal dysfunction" or, more frequently, of an acute obstruction. Upper abdominal pain, cramps, vomiting, and hematemesis were the predominant symptoms. An epigastric mass was present in some instances. Death may be caused by hemorrhage, obstruction, or by gangrene of the small intestine. The roentgenological picture is pathognomonic in most cases and the diagnosis is not difficult if this possibility is kept in mind. In typical cases, a rounded radiolucent mass is demonstrated at the gastric stoma consisting of whirls of edematous small bowel mucosa. The gastroscopic picture is also diagnostic but gastroscopy has been performed infrequently.

Treatment

Many cases did not require surgical intervention. Spontaneous reduction of the intussusception was observed in several cases during serial fluoroscopic examinations and after decompression of the stomach by a gastric tube. Persistent obstruction, bleeding, and the danger of gangrene, however, make surgical exploration necessary. In the majority of the cases, a simple reduction of the intussusception may be sufficient. Fixing of the jejunal loop, resection of the affected segment, partial gastrectomy in case of simple gastroenterostomy, narrowing of the stoma and conversion of the posterior anastomosis into an anterior one were described as corrective measures.

It seems that they are all successful in preventing a recurrence. It was observed, however, that many patients continued to have some epigastric discomfort, nausea, or loss of weight even after a successful operation.

Jejunogastric intussusception is an unusual complication of gastroenterostomy. It is rare following partial gastrectomy.

One case of an acute jejunogastric intussusception is reported in a 62-year-old man, ten years following a partial gastrectomy and a posterior Polya type anastomosis.

Case Report

A 62-year-old white man was admitted in July 1958 complaining of nausea, vomiting, and abdominal pain of three days duration. He also experienced

This article was prepared while Dr. Scott was at the Veterans Administration Consolidated Center, Wadsworth Division's Department of Surgery in Wadsworth, Kansas.

some retrosternal distress. In 1948, he had a partial gastrectomy for a benign lesion of the antrum. Following surgery, occasional postcibal pain developed in the epigastrium. The physical examination revealed a well nourished, acutely ill, and confused patient. The mucous membranes were dry. There was moderate tenderness in the upper abdomen. The abdomen was otherwise soft and bowel sounds were present. The white blood cell count was 7,800 per cmm. blood.

Differential count: neutrophils 93 per cent, lymphocytes 6 per cent, eosinophils 1 per cent. The hemoglobin was 12.9 gm. per 100 ml. of blood; the hematocrit was 45 v.p.c. The specific gravity of the urine was 1,030. Blood chemistry studies done on the day following admission were within normal limits except that the plasma bicarbonate was 21 mEq/L and the chlorides 107 mEq/L. During the next 24 hours, three liters of thick, foul-smelling gastric contents were obtained by the gastric tube. Following the administration of intravenous fluids, the clouded sensorium became clear. A barium study of the upper gastrointestinal tract revealed a round, radiolucent filling defect at the stoma causing the obstruction (Figure 1).

Although the patient felt much better and the epigastric pain subsided, an abdominal exploration was performed. The gastric stump was greatly dilated. A posterior Polya type anastomosis was found but there was no evidence of an obstructing mass. The proximal jejunal loop was normal. The distal loop was edematous and injected for a length of 30 cms. It could be a easily invaginated into the stomach producing a mass similar to that observed on the x-ray. It seems that the efferent loop intussuscepted into the gastric stump in a retrograde manner causing an acute obstruction. Following the decompression of the stomach by the gastric tube, the intussusception had become reduced.

The large stoma was partially closed to prevent a recurrence. The postoperative course was uneventful. X-ray follow-up examination revealed a well functioning stoma and the patient was discharged two weeks following surgery in good condition. Occasional mild, postcibal pain, however, continued to occur.

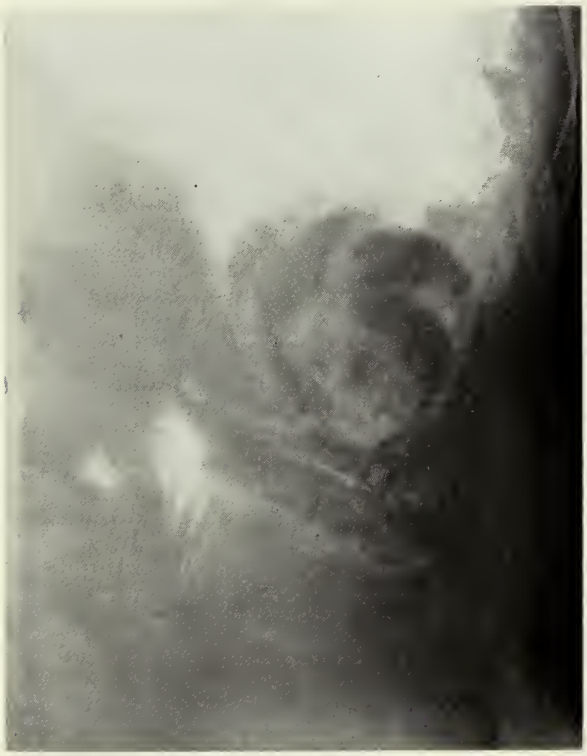

Figure 1. The preoperative barium study revealed a greatly distended gastric stump. The stoma was obstructed by a round radiolucent mass exhibiting a concentric whirled pattern.

Veterans Hospital
Dwight, Illinois

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Serum Enzymes as Diagnostic Aids

Serum Lactic Dehydrogenase, Malic Dehydrogenase, Glutamic-Oxalacetic Transaminase, and Glutamic-Pyruvic Transaminase in a Large Series of Patients

LEITHA D. BUNCH, M.A., *and* **G. LOREN NORRIS, M.D.,** *Winfield*

LDH values have been determined in 283 patients with a variety of diseases. Parallel MDH, SGO-T and SGP-T data were taken in many of these individuals. MDH activity closely paralleled that of LDH in all conditions. LDH is the procedure of choice due to some technical disadvantages in the MDH technique.

That serum glutamic-oxalacetic transaminase (SGO-T), glutamic-pyruvic transaminase (SGP-T), and lactic dehydrogenase (LDH) are being used extensively is evident from the wealth of literature on these serum enzymes. Malic dehydrogenase (MDH) has not been as widely used clinically as the other three serum enzymes. Harper has reviewed the literature up to July 1, 1957, on the use of serum enzymes as diagnostic aids.[1] A few papers not covered by this author that are especially pertinent to our work will be cited here. MDH and SGO-T activities were measured by Bing and his associates in dogs following experimental infarctions. LaDue shows serial data for SGO-T, SGP-T, and LDH in patients with heart muscle damage. Linde has compared the patterns of SGO-T, SGP-T, and LDH in serum and tissue extracts in cardiac and hepatic diseases. Chinsky, Wolff, and Sherry compared SGP-T and SGO-T in 150 individuals with various diseases, especially in patients with cardiac and hepatic damage. They stated that SGP-T assay was most useful as an adjunct in the interpretation of an elevated SGO-T level. Wroblewski reported that alterations in serum alkaline phosphatase, SGO-T and SGP-T were useful in identifying the etiology of jaundice.

We have measured LDH, MDH, SGO-T, and SGP-T in a variety of disease states, taking serial data in order to follow the changes of the enzyme levels during the course of the illness. The results of these studies in 283 patients are reported here.

Methods and Materials

SGO-T and SGP-T were determined by the method of Karmen, *et al.* with the modifications described by us earlier.[10] LDH activity was measured by the method of White and MDH activity by that of Bing. All the above named enzymes were determined by the use of the Beckman DU spectrophotometer.[2] Other biochemical data were taken to evaluate fully the condition of the patient. The particular tests done will be indicated in "Results" along with references to the method used for the analysis. Normal values for SGO-T, SGP-T, LDH, and MDH were determined, using serum from healthy individuals, not necessarily in the basal state. Normal values for the other chemical characteristics had been determined earlier in our laboratory. Except for the initial studies on some patients with a provisional diagnosis of acute myocardial infarction, all blood samples from patients were drawn with the individual under basal conditions. As the clinical state of a patient changed, biochemical studies were repeated.

Two special groups of patients were studied, one with known or suspected acute myocardial infarctions and the second with acute or chronic liver diseases. Other subjects were selected at random from our medical and surgical services.

The results and the conditions studied are summarized in Table 1. The ratios given in Table 1 are the number of patients with enzyme values above normal—the number of patients studied. If activities above normal were observed in the group, the maximum value is given in parentheses. Data for healthy individuals are shown at the bottom of the table.

Heart Diseases

Acute Myocardial Infarctions

As indicated in Table 1 of 44 patients studied with acute myocardial infarctions, 44 had elevated LDH values. Fifteen of 16 studied had MDH values above normal; 41 of 44 had elevated SGO-T; and 15 of 37 had elevated SGP-T values. Of the three

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[1] After this manuscript was completed, a comprehensive review of serum transaminase by Wroblewski was published.

[2] Recently we have compared values determined in the Beckman DU spectrophotometer with those determined in the Macalaster-Bicknell adapted photometer. The latter instrument is satisfactory for clinical use except for highly jaundiced or lipemic sera.

individuals with normal SGO-T activity, one was not studied until three days after the infarction, and the time of the attack could not be established in either of the other two individuals.

In Table 2 serial data are given for ten patients with acute myocardial infarctions. If LDH and MDH values are compared for any one patient, it can be seen, that in general, the two enzyme levels are parallel but are not related to each other by a constant. In a few serum samples MDH was normal while LDH was elevated. For example, Patient one did not have an elevated MDH on either of two occasions studied, although LDH and SGO-T were elevated. Patient four had a normal MDH value on the tenth day, at which time, LDH was twice normal. Patient seven had normal MDH on the third day with an LDH value of 196 units. Lesser discrepancies are seen in other individuals. LDH remained elevated several days longer than did SGO-T in Patients three, four, nine, and ten. Patient seven did not have an elevated SGO-T at any time but it is to be noted that he was not studied until three days after the infarction. SGP-T values were not increased as much as SGO-T by an infarction and the determination is of little direct value in the diagnosis of cardiac necrosis. SGP-T levels help to evaluate the clinical course of a cardiac patient. An increased value, with decreasing SGO-T and LDH activities, may be indicative of passive congestion of the liver.

Other Heart Diseases (Table 1)

Thirty-seven individuals were studied who were suspected of having had heart attacks, but no heart disease was found. In two of these 37 patients, slightly elevated LDH values were found, 116 and 119 units, respectively. These values were normal 12 to 24 hours later. No organic disease was found in either of these two people. All SGO-T values were normal in these 37 patients, as were SGP-T and MDH in the samples so analyzed. At least two serum samples were taken from each subject 12 to 24 hours apart. The results on patients with congestive failure, coronary insufficiency and other heart abnormalities are tabulated in the summary of conditions studied (Table 1). The highest value in these three groups was 124 LDH units in a patient with cardiac decompensation. All enzyme values except LDH were within the normal range.

Comments on Patients With Cardiac Diseases

That LDH activity remained elevated longer than SGO-T following acute myocardial infarction is in agreement with data of LaDue, White, and others. Durant, Bowers, and Twaddle found that LDH values offered little additional aid in establishing the diagnosis of myocardial infarctions. Our observation that SGP-T is less affected in this condition than SGO-T or LDH is the common experience of other investigators.[5, 7] In some patients (detailed data not shown), we found a slight elevation in SGP-T five days or longer after an infarction. This increase accompanied the development of passive congestion of the liver. A similar observation has been made by Chinsky, Wolff, and Sherry. Bing, Castellanos, and Siegel found that MDH values were increased in patients with myocardial infarction, reaching peak activity about 24 hours after the onset of pain. They found the incidence of increased activity about the same for MDH and SGO-T. MDH determinations have not been as widely used as LDH or SGO-T. The reports by Bing and his associates are the only ones showing the clinical application of this enzyme that have come to our attention. In our data comparing LDH and MDH values, the similarity is remarkable. One disadvantage to the MDH determination is the instability of the substrate, oxalacetic acid. A second drawback to the test is the lack of specificity. Bing, *et al.* points out that the reaction is not specific due to the conversion of oxalacetic acid to products other than malic acid during the test period. Vesell and Bearn investigated the heterogeneity of MDH and LDH in human serum. Both enzymes are located in three distinct electrophoretic fractions of serum proteins, and two of the three peaks seem to be equally active in MDH and LDH activity. The authors suggest that the multiplicity of the dehydrogenase enzymes in serum should be considered in evaluating enzyme observations in disease states. Elevated SGP-T values were not specifically related to myocardial damage, but were found useful in following the course of a patient after an infarction. Elevated SGP-T values may indicate liver cell damage secondary to cardiac insufficiency.

Wroblewski and Manso have found that ethyl biscoumacetate and bishydroxycoumarin may significantly alter SGO-T, SGP-T and LDH activities. They found that usually the effect of anticoagulants was characterized by greater increase in SGP-T than SGO-T activity. This often permitted the differentiation of a drug-induced elevation from those accompanying myocardial necrosis.

We have found the use of LDH and SGO-T more valuable than the use of either test alone in the diagnosis of myocardial necrosis. The strategic addition of SGP-T data may give information regarding hepatic tissue injury. MDH determinations have not been of any added value and have been discontinued in our laboratory.

Liver Diseases

A total of 32 patients were studied with various liver diseases. The results are summarized in Table 1.

TABLE 1

SUMMARY OF CONDITIONS STUDIED AND RESULTS

	No. Above Normal/No. Studied (Maximum Abnormal Values)			
	LDH UNITS	MDH UNITS	SGO-T UNITS	SGP-T UNITS
Heart Diseases:				
Acute myocardial infarctions	44/44 (740)	15/16 (350)	41/44 (460)	15/37 (127)
Suspected myocardial infarctions, no heart disease found	2/37 (119)	0/4	0/37	0/26
Congestive failure	1/4 (116)	0/1	0/4	0/4
Coronary insufficiency	4/6 (124)	—	0/6	0/6
Others	1/6 (119)	—	0/6	0/4
Liver Diseases:				
Infectious hepatitis	9/10 (476)	2/2 (167)	10/10 (2140)	10/10 (1917)
Obstructive jaundice	3/9 (201)	0/2	9/9 (310)	8/9 (209)
Cirrhosis, Laennec's	3/7 (309)	0/1	7/7 (200)	7/7 (116)
Cirrhosis, cardiac	2/2 (184)	—	2/2 (67)	1/2 (46)
Toxic hepatitis (includes chlorpromazine)	3/4 (358)	0/1	4/4 (340)	4/4 (455)
Carcinomas	21/44 (392)	5/10 (193)	12/32 (235)	10/27 (210)
Sarcomas	4/5 (359)	—	2/4 (262)	2/3 (210)
Leukemia	1/1 (371)	1/1 (217)	0/1	0/1
Pernicious anemia	3/3 (482)	—	0/3	0/3
Polycythemia vera	2/2 (155)	—	0/2	0/2
Paroxysmal intermittent hematuria	1/1 (860)	1/1 (307)	1/1 (58)	0/1
Hemolytic reaction to blood	1/1 (156)	—	—	—
Shock, various etiology	9/9 (1690)	2/3 (1260)	7/8 (2000)	5/8 (525)
Trauma (surgery, fractures)	0/19	0/1	0/14	0/10
Diabetes	0/8	0/4	0/7	0/5
Central nervous system diseases (includes cardiovascular accidents)	0/4	0/2	1/4 (32)	1/1 (30)
Nephritis, chronic	0/6	0/1	0/4	0/4
Unclassified (includes general infections, skin diseases, and others)	3/51 (149)	0/4	0/49	3/45 (45)
Healthy controls: Mean	79	56	15	11
Range	35-110	40-80	10-30	5-25
No.	70	31	107	67

The patients are classified according to the type of liver pathology. The number of patients with elevated enzyme values, the number studied, and the highest value observed in each category is shown. Serum transaminase activities are very high in hepatitis. The maximum SGO-T value observed in our patients was 2,140 units and the maximum SGP-T was 1917 units, not in the same patient. In those patients in whom transaminase values are not more than two or three times normal, LDH activity is usually not increased. In the two patients studied for both LDH and MDH content, the values were proportional.

TABLE 2
ACUTE MYOCARDIAL INFARCTIONS

Patient No.	Days After Infarction	LDH Units	MDH Units	SGO-T Units	SGP-T Units
1	<½	148	60	36	19
	3	176	40	58	—
2	<1	585	327	312	—
	2	Deceased			
3	1	154	107	39	14
	2	205	127	42	—
	3	186	90	36	—
	4	188	93	26	—
	6	156	90	20	—
	9	100	90	14	6
4	½	306	177	138	51
	<1	315	190	170	—
	1	528	250	192	63
	2	418	210	63	38
	4	252	120	53	57
	6	184	113	38	67
	10	222	53	27	52
	17	62	60	16	23
	31	73	40	12	21
5	3	195	100	55	13
	4	167	100	39	—
	5	98	90	29	—
	7	178	100	61	37
	13	125	70	48	57
	18	90	67	36	33
	30	73	33	24	24
	39	72	40	21	11
6	<½	118	75	27	6
	1	451	320	295	—
	2	512	350	200	—
	4	Deceased			
7	3	196	70	18	—
	4	172	97	15	9
	7	141	47	15	9
	10	103	60	15	11
	18	68	43	14	14
8	1	359	250	317	—
	2	522	290	288	48
	3	562	270	135	—
	5	397	190	42	33
	7	267	140	51	63
	9	226	140	35	53
	12	149	90	21	36
	14	108	80	19	28
	22	Deceased			

TABLE 2—*Continued*
ACUTE MYOCARDIAL INFARCTIONS

Patient No.	Days After Infarction	LDH Units	MDH Units	SGO-T Units	SGP-T Units
9	½	188	240	41	—
	1	386	330	111	—
	2	398	227	56	12
	6	212	117	22	—
	11	156	127	29	—
	14	95	—	16	21
	19	83	67	16	12
10	1	235	147	55	—
	3	171	150	24	—
	5	115	83	16	11
	11	82	—	19	—
	21	82	—	14	—
Healthy controls:					
Mean		79	56	15	11
Range		35-110	40-80	10-30	5-25
No.		70	31	107	67

Serial data on representative patients with the various types of liver diseases are given in Table 3. Data for serum cholinesterase (ChE), bilirubin, cephalin flocculation, and alkaline phosphatase are also given. Normal values for these characteristics are shown at the end of the table.

Infectious Hepatitis

Ten patients were studied serially who had infectious hepatitis. SGO-T and SGP-T were elevated in each case. Detailed data are shown for two patients with infectious hepatitis in Table 3, Patients 11 and 12. Patients 11 had higher SGP-T than SGO-T until the values became normal. At the time SGP-T was maximum, 1917 units (75 times normal), LDH was only 288 units, or less than three times normal. In Patient 12, SGP-T values were higher than SGO-T except in the first sample. It is the usual pattern in infectious hepatitis for SGP-T to be higher than SGO-T. The MDH values in Patient 12 are elevated in the same serum samples as LDH. The other liver function tests in these two patients are consistent with the diagnosis.

Obstructive Jaundice

As indicated in Table 1, nine patients were studied who had obstructive jaundice. SGO-T was elevated in each patient and SGP-T in all except one. It can be seen that the degree of elevation of either transaminase is much less in this liver disorder than in infectious hepatitis. In six of the nine patients, SGO-T was higher than SGP-T. LDH values were elevated in only three of the nine individuals; MDH was normal in the two patients in whom it was measured, with LDH normal in the same sample.

Patients 13 and 14 (Table 3) illustrate the results of the enzyme and other laboratory tests in patients

TABLE 3

LIVER DISEASES

Patient No.	*Diagnosis*	*Day of Study*	*LDH Units*	*MDH Units*	*SGO-T Units*	*SGP-T Units*	*ChE Units*	*Bilirubin Mg/100 Ml*	*Ceph. Flocc.*	*Alk. Phosphatase Units*
11	Infectious hepatitis	1	240	—	553	1093	1.64	11.1	4+	14.4
		13	288	—	1592	1917	1.27	28.8	4+	12.8
		36	100	—	191	268	1.61	8.6	4+	12.0
		79	102	—	25	12	1.81	1.0	3+	4.2
12	Infectious hepatitis	1	278	160	790	590	1.52	12.1	4+	12.4
		7	172	93	225	530	1.42	8.9	4+	16.4
		12	106	67	76	109	1.77	4.2	4+	10.5
		25	73	—	36	40	2.02	2.2	4+	6.4
		48	—	—	31	11	1.50	1.3	1+	5.0
		84	—	—	19	8	1.55	0.7	0	4.5
13	Obs. jaundice	1	123	—	200	139	2.00	2.3	2+	62.8
		3	201	—	310	163	2.12	4.9	1+	85.0
14	Obs. jaundice	1	83	—	78	79	1.82	2.0	2+	26.6
		2	Surgery							
		4	65	—	23	38	1.60	1.0	1+	16.1
15	Cirrhosis, Laennec's	1	68	—	181	29	1.89	12.6	1+	31.6
		13	56	—	61	8	0.98	18.5	3+	12.9
		20	—	—	46	15	1.21	20.0	1+	16.1
		23	78	—	37	11	0.91	15.9	4+	12.5
		24	Deceased							
16	Cirrhosis, Laennec's	1	105	—	107	28	0.95	5.8	3+	23.2
		22	67	—	61	20	0.78	2.3	2+	19.8
		40	—	—	50	19	1.40	1.8	3+	17.7
		103	71	—	34	16	1.98	1.0	1+	18.5
		162	60	—	30	21	1.86	0.9	0	18.6
17	Cirrhosis, cardiac	1	117	—	45	46	1.68	3.0	1+	7.7
		9	142	—	44	31	0.90	0.4	1+	8.6
		22	58	—	16	16	1.42	0.5	1+	9.0
18	Cirrhosis, cardiac	1	138	—	33	16	1.67	2.0	0	12.6
		13	159	—	46	13	1.34	4.0	1+	13.7
		27	107	—	35	12	2.04	1.2	1+	13.8
19	Toxic hepatitis	1	209	—	340	455	2.10	1.2	3+	19.8
		5	85	—	57	157	2.07	0.2	1+	34.2
20	Toxic hepatitis	1	358	—	51	107	1.05	1.4	1+	36.4
Healthy controls:	Mean		79	56	15	11	2.32	—	—	5.7
	Range		35-110	40-80	10-30	5-25	1.50-3.00	0-1.0	0-1+	3.0-10.0
	No.		70	31	107	67	376	—	—	140

with biliary obstruction due to stones. In some patients with early obstruction, bilirubin was elevated before serum transaminase values became abnormal (data not shown). In Table 3, it can be seen that the two patients with obstructive jaundice have higher serum alkaline phosphatase values than the two patients with infectious hepatitis. This is the common pattern.

Laennec's Cirrhosis

In our series are seven patients with Laennec's cirrhosis (Table 1). In all patients both serum transaminases showed some elevation at the height of the illness, although in some samples, the increase was very slight. SGO-T was relatively more affected than SGP-T in all instances. Three of the seven patients had elevated LDH values, the highest being 309 units. This LDH level was uncommonly high for cirrhosis, especially in view of the SGO-T of 81 and the SGP-T of 31 units. MDH was determined in only one patient, on two occasions. The values were normal and LDH values were normal in these same serum samples. The highest SGO-T in this group was 200 and the highest SGP-T was 116, in the same serum sample. Patients 15 and 16 in Table 3 illustrate the findings in this liver pathology. Patient 15 died and Patient 16 responded well to treatment. In both of these individuals, SGO-T was two to four times normal at the time the patient came under observation, but SGP-T was always less than 30 units. Serum ChE values are more indicative of the clinical course of Patients 15 and 16 than any other biochemical characteristic shown here. Serum albumin, as determined by paper strip electrophoresis (data not shown) paralleled serum ChE values in all patients with Laennec's cirrhosis.

Cardiac Cirrhosis

Two patients with cardiac cirrhosis were studied. Serial data on both of these individuals is included in Table 3, Patients 17 and 18. In Patient 17, SGO-T, SGP-T and LDH are each slightly elevated, while in Patient 18, SGP-T is normal. The serum enzymes and other biochemical characteristics are very similar for cardiac and Laennec's cirrhosis.

Toxic Hepatitis (Chlorpromazine)

Four patients with early Thorazine toxicity were studied. Three of the four had elevated LDH values. MDH determinations were not done. All patients had some elevation of SGO-T and SGP-T. Patients 19 and 20 (Table 3) are examples of the findings in mild toxicity due to chlorpromazine. Serum alkaline phosphatase is relatively higher than bilirubin in these two individuals. From our observations we have the impression that LDH is higher in relation to SGO-T and SGP-T in Thorazine toxicity than in hepatitis or extra hepatic obstruction. A comparison of the data (Table 3) illustrates this point. Serum transaminases may show elevations due to Thorazine toxicity before serum bilirubin or alkaline phosphatase values are affected (data not shown).

Comments on Patients With Liver Diseases

The highest SGO-T and SGP-T values observed have been in patients with infectious hepatitis (Table 1). SGO-T would be better than SGP-T as a screening test for liver disease, but serial changes in the two enzymes give useful information for the differential diagnosis of the type of liver disease. We found that SGP-T values are usually higher than SGO-T in patients with infectious hepatitis. This agrees with the work of Wroblewski and Chinsky, *et al.* LDH values are much less affected in hepatitis. In serum samples with transaminase levels 50 to 70 times normal, LDH values are only four to five times normal. In obstructive jaundice, serum transaminase values are elevated, but they are much lower than in hepatitis. LDH values are inconsistently elevated in biliary obstruction. In our small series of patients with obstructive jaundice, we found no consistent pattern as regards the relative elevations of SGO-T and SGP-T. Wroblewski found SGP-T was higher than SGO-T in his patients with biliary obstruction. Chinsky and associates noted a slight tendency for SGP-T to be higher than SGO-T, but this was not as pronounced as in viral hepatitis. In our patients in whom parallel determinations of LDH and MDH were made, the two values were very similar in their relative increase above the normal value. In Laennec's or cardiac cirrhosis, SGO-T is slightly elevated. SGP-T activity is less affected and may be normal. Serum transaminase values are similarly affected by primary and secondary cirrhosis. Our findings in liver cirrhosis are in agreement with those of other investigators.[7, 8]

In our four patients with toxic hepatitis, SGO-T, SGP-T, and LDH were elevated. The degree of elevation of LDH was greater for the corresponding transaminases than was found in other types of liver disease. Our results were not consistent in the relationships between SGO-T and SGP-T. Wroblewski found SGP-T higher than SGO-T in his patients with hepatotoxic jaundice. Chinsky, *et al.* also found SGP-T generally higher than SGO-T in Thorazine jaundice.

We have found SGO-T determinations very valuable in screening for liver disease. If an elevated value is found, supplementary SGP-T and LDH data may contribute to the differential diagnosis.

Neoplasms

Carcinoma and Sarcoma

Forty-four patients with carcinoma and five with sarcoma were in our series of patients. The results are tabulated in Table 1. Since there was no difference in the biochemical pattern in these two neoplastic diseases, the results will be considered in the 49 patients as a single group. Twenty-five of 49 had elevated LDH levels, the highest being 392 units in a patient with cancer of the prostate with metastasis to the bone. MDH values were elevated in five of ten patients with carcinomas. No MDH determinations were made in those with sarcoma. In each instance that an elevated MDH was found, the LDH was also above normal. Fourteen of 36 patients had high SGO-T and 12 of 30 had high SGP-T values. SGO-T was higher than SGP-T in almost all of the samples in which both transaminase determinations were made. Serum alkaline phosphatase (10) and ChE (10) were determined in many of these patients.

In Table 4, data for LDH, SGO-T, serum alkaline

TABLE 4

COMPARISON OF SERUM ENZYMES IN PATIENTS WITH CARCINOMA OR SARCOMA

(N = value within normal range)

Patient No.	*Diagnosis*	*Metastases*	*LDH Units*	*SGO-T Units*	*Alk. Phosphase Units*	*ChE Units*	*Other pertinent data*
21	Ca lung	+	N	N	14	1.39	
22	Ca breast	+	N	N	N	1.17	
23	Ca breast	–	N	N	N	N	
24	Ca breast	?	116	N	N	0.72	
25	Ca rectum	+	223	N	20	0.90	
26	Ca colon	+	N	N	N	0.90	
27	Ca colon	+	141	52	N	0.83	
28	Ca colon	?	138	N	N	1.37	
29	Ca colon	+	N	N	N	0.75	
30	Ca sigmoid	+	223	N	N	1.31	
31	Ca retroperitoneum	+	160	N	15	1.13	
32	Ca small intestine	+	N	123	79	1.36	
33	Ca stomach	+	N	53	15	0.96	
34	Ca gallbladder	+	120	79	26	0.74	
35	Ca gallbladder	+	133	74	45	0.78	
36	Ca liver	?	195	235	194	1.28	
37	Ca pancreas?	+	163	N	132	1.17	
38	Ca pancreas	+	317	64	15	0.99	
39	Ca urinary bladder	+	132	89	23	0.97	
40	Ca kidney	+	N	N	N	0.70	
41	Ca uterus	?	N	N	N	1.46	
42	Ca prostate	+	N	N	25	1.28	Acid phosphatase 5 units
43	Ca prostate	+	392	45	71	0.66	25 units
44	Ca prostate	+	124	N	42	1.11	
45	Ca prostate	+	N	N	53	1.00	3 units
46	Ca prostate	+	221	40	18	1.00	5 units
47	Ca penis	?	N	159	15	N	
48	Ca generalized	+	198	32	17	1.08	
49	Sarcoma	+	359	N	13	0.84	
50	Sarcoma	+	N	N	N	1.41	
51	Sarcoma	+	168	108	39	N	
52	Sarcoma	+	340	262	35	1.27	
No. abnormal			19	14	21	29	
Healthy controls:	Mean		79	15	5.7	2.32	<1.0 units,
	Range		35-110	10-30	3.0-10.0	1.50-3.00	Fishman
	No.		70	107	140	376	method[26]

phosphatase, and ChE are shown for 32 cancer patients in whom all four tests were made. In most instances, the data shown were taken at the time the individual came under observation. As can be seen from the table, ChE was below normal in 29 of 32 patients. Alkaline phosphatase, LDH and SGO-T were above normal in 21, 19, and 14 cases, respectively. In only one, Patient 21, was the LDH elevated without being associated with low ChE activity. In Patients 24, 27, 28, and 30, LDH values were high with alkaline phosphatase levels normal. In no instance did we find that an elevated LDH contributed directly to the detection of a malignancy. In some instances, an elevated SGO-T was indicative, along with other data, of bone or liver metastasis.

Bierman and his associates found that 144 of 206 patients with proven cancer and lymphomas had LDH values above normal. West and Zimmerman reported that 76 of 173 patients with carcinoma or sarcoma had elevated LDH values; 53 of 121 had elevated SGO-T content. They also found that the majority of patients with hepatic metastases had abnormal levels of LDH, SGO-T, alkaline phosphatase or BSP retention. The observations of White support the thesis that elevated LDH activity in patients with cancer may be the result of, and an indicator of, muscle wasting. All of the above investigators are in agreement that LDH elevations are too nonspecific to be considered as diagnostic for cancer. Hill did not find the test of any value in diagnosing neoplasms. The significance of low serum ChE and high alkaline phosphatase in malignancies is presented by Harper.

Leukemia, Pernicious Anema, Polycythemia, and Hemolytic Situations (Table 1)

We did not have enough patients with any one of these diseases to warrant detailed presentation of results. Bierman, Hill and Reinhardt found a higher correlation between high LDH in leukemias than in other neoplastic diseases. Zimmerman, West and Heller present data showing LDH consistently elevated in patients with megaloblastic anemia and intravascular hemolysis. They found SGO-T levels elevated in these circumstances only when there was other evidence of hepatic disease. In our patient with paroxysmal intermittent hematuria, if we had more vigorously pursued the cause of the elevated LDH, the diagnosis may have been apparent earlier. The elevated enzyme level was the only constant finding and remained elevated between bouts of hematuria.

Shock

Of nine patients in shock, nine had elevated LDH values, ranging from 217 to 1,690 units. SGO-T was elevated in all but one of eight patients in whom it was measured. The range of values for SGO-T was 30 to 2,000 units. SGP-T levels were elevated in the five patients with the highest SGO-T levels. The relative increases of LDH and SGO-T were not consistent within the group. MDH levels were proportional to LDH content in the two measurements made.

Chinsky and Sherry found elevated SGO-T values in almost all patients who were in shock for periods of 24 hours, regardless of the underlying disease. In the patients who had autopsies, liver necrosis was present in each case. The causes of elevated LDH in vascular collapse have not been established but, with the widespread distribution of the enzyme in body tissues, this observation would be anticipated.

Miscellaneous

In Table 1, the groups listed below "Shock" contained few instances of elevated enzyme values. The number of individuals with any one disease was too small to draw any conclusions. However, these normal values in the heterogenous sampling of diseases served to increase our confidence in the importance of an elevated transaminase or dehydrogenase. Except in three of the 283 patients studied, all values higher than normal were explained. In these three patients (Unclassified Group, Table 1), the effect of medication before they came under our observation, could not be ruled out. The nineteen patients listed as "trauma" had fractured limbs or such surgery as gastrectomy, hysterectomy, or prostatectomy. No elevations outside the normal range were found.

The relation between tissue injury and SGO-T has been reported by Nickell and Allbritten. They found that thoracic, cardiovascular and biliary tract surgical operations and severe traumatic injuries usually resulted in abnormal SGO-T content. Most other surgical procedures did not cause significant increases in the enzyme level. Fleisher, Wakim and Goldstein have reported that SGO-T activity was increased in some cases of cerebrovascular accidents, head injuries and other diseases of the central nervous system. LDH values were not affected in these same conditions. West and Zimmerman studied SGO-T and LDH in patients with various types of kidney diseases. They found LDH elevated in 43 of 71 patients. There was no relationship between enzyme levels and the degree of azotemia. In only one patient with renal failure, did they find an elevated SGO-T value without demonstrable hepatic disease.

Summary

In the diagnosis of acute myocardial infarctions, we have found the use of both LDH and SGO-T more valuable than the use of either test alone. LDH elevations following an infarction remain above normal several days longer than do SGO-T levels. The additional information gained from SGP-T data may be useful in detecting secondary hepatic tissue injury.

(Continued on page 82)

Committee
REPORTS

Defective Hearing in Children

Part IV—Interpretation of the Audiogram

C. W. ARMSTRONG, M.D., *Salina*, Editor

When the physician has finished his complete examination, he is ready to interpret the findings and give a diagnosis and recommendations to the parents. Recommendations to the school teacher will

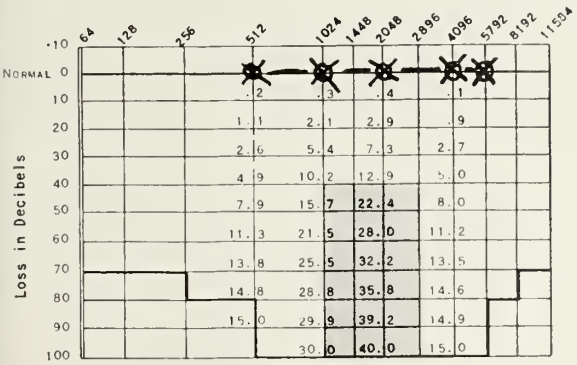

Figure 1. Shaded section indicates critical area of speech interpretation.

also be necessary. The teacher wants to know if there is anything that she can do to help the child in his education; if the child should be given special attention as to seating in the room, special assignments, special personal attention; or if the defective hearing appears to be a transitory affair.

If the audiogram looks like Figure 1, the child has normal hearing in both ears and any defect uncovered by the school examiner was transitory. The child may return to school with no special consideration and the parents will need to be reassured that neither the school examiner nor the physician neglected any possibility of hearing difficulty. If the hearing loss recurs, the child should again return

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A series of six articles on Defective Hearing in Children is being printed in the *Journal*. These articles were prepared by C. W. Armstrong, M.D., Salina, Kansas, for the Committee on Conservation of Hearing and Speech. The committee members are V. R. Moorman, chairman, C. W. Armstrong, J. A. Budetti, R. A. Draemel, E. L. Gann, C. L. Gray, W. P. McKnight, E. E. Miller, Ruth Montgomery-Short, W. D. Pitman, R. R. Preston, G. O. Proud, R. E. Riederer, and M. J. Ryan.

The titles of the coming articles will be Evaluation of Clinical Data and Conclusions.

This is the fourth article in a series of six prepared by the Kansas Medical Society Committee on Conservation of Hearing and Speech and edited by Dr. C. W. Armstrong, Salina. The next article will appear in the March issue of the Journal.

for a complete examination and evaluation of the hearing loss.

If the audiogram is similar to Figure 2, which

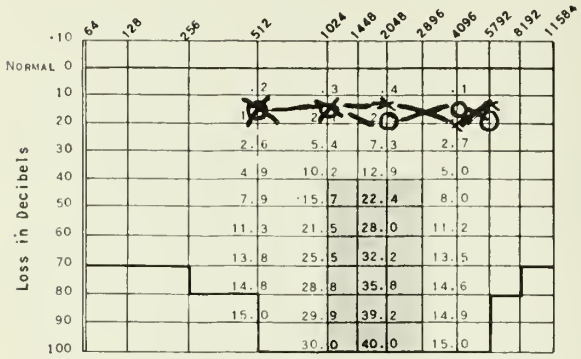


Figure 2. Shaded section indicates critical area of speech interpretation.

shows an average 15 decibel loss, the child is able to hear fairly well but will miss sounds at about the intensity of the whispered voice. A recent acute rhinitis may produce such a hearing loss.

The parents should be advised that the hearing loss, which is not severe, may well show improvement under therapy. In school the child will hear better if he is seated near the teacher. If the hearing loss improves under therapy, the teacher must be notified that preferential seating is no longer necessary. When the teacher is not notified of the hearing improvement, the child may be occupying space sorely needed for other children with handicaps and it increases the hardships of school management.

If the audiogram resembles Figure 3, which repre-

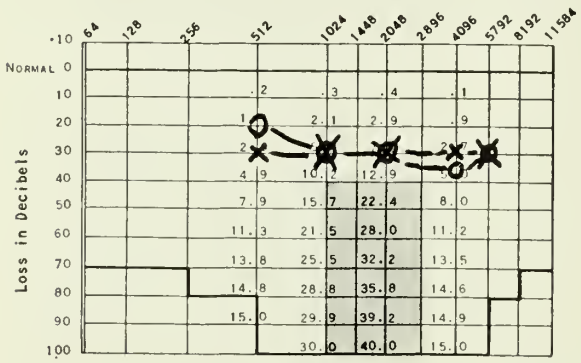


Figure 3. Shaded section indicates critical area of speech interpretation.

sents a 30 decibel loss, the child has a great enough hearing loss so that he may miss the majority of class discussion and instructions. A complete physical examination, laboratory work, and more detailed audiometric testing are necessary. Bone conduction tests to detect an auditory nerve defect may be done with tuning forks but are somewhat more accurate with the bone conduction attachment on the audiometer.

Such a hearing loss may accompany an acute nasopharyngitis, eustachian tube blockage or secretions in the middle ear. If such conditions exist, adequate therapy should be started immediately.

The parents are instructed that the child has difficulty in hearing conversation at the normal level of loudness. In school the child deserves preferential

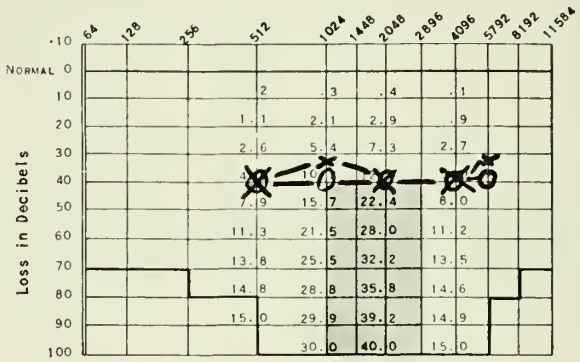


Figure 4. Shaded section indicates critical area of speech interpretation.

seating and it will be necessary for the teacher to be certain that the child understands assignments, explanations, and instructions.

If the hearing curve looks like Figure 4, which represents a 40 decibel loss, the defect is severe and calls for immediate attention. In many cases, an extensive differential diagnosis is indicated. If the physician can not cope with the problem, he should not prescribe a hearing aid. It is entirely possible that

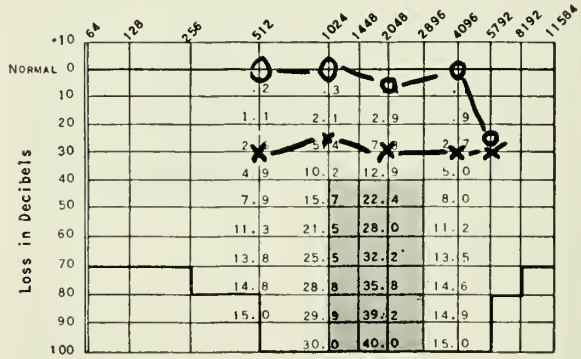


Figure 5. Shaded section indicates critical area of speech interpretation.

an otologist can help the patient to return to normal hearing. The least that can be done, if no improvement is obtained in a reasonable period of time,

is to request an otologic consultation. To do so gives credit to the intelligence and honesty of the physician involved.

If the audiogram resembles Figure 5, the patient has relatively normal hearing in the right ear and a serious defect of hearing in the left ear. The parents and teacher should be notified so that they can give the child proper consideration.

Audiograms may vary from morning to evening and if there is not an exact correspondence of the audiogram made by the school examiner and the physician, it should occasion no surprise. If there is a wide discrepancy a bit of history taking over and above the usual history may bring out its cause. The deafness may be on a psychogenic basis. It may also be due to a severe ear infection, meningitis, or other difficulty in the brain centers. As in all of medicine, a good history is generally the most important single factor in establishing a diagnosis.

The audiometer is an instrument to be used as an aid in the diagnosis of defective hearing. It is true that at times it gives more information than at other times but it never replaces clinical diagnostic measures. To neglect clinical diagnostic measures may result in such a ridiculous situation as an unseen plug of cerumen being the entire cause of the hearing defect.

710 United Building
Salina, Kansas

Bright Future for Tots

There is a bright future ahead for the 4,000 babies who will be born in the United States with cleft lip and cleft palate during 1960.

This hopeful outlook is revealed by Eugene T. McDonald, Ed.D., prominent speech and hearing specialist and director of the Speech and Hearing Clinic at the Pennsylvania State University, in *Bright Promise*—just published by the National Society for Crippled Children and Adults.

Dr. McDonald says that advances in surgery have made it possible to repair lips and make adequate functions possible in many palates. Dental techniques have been developed for reconstructing by prosthetic means those palates which cannot be repaired surgically. Speech therapists today know how to help children with cleft palates develop good speech. Furthermore, there are helpful sources for information on problems of cleft palate, as well as resources for treatment, including state and local Easter Seal societies, state crippled children's services, many public schools in metropolitan areas and the speech clinics at colleges and universities.

Well illustrated with diagrams and "before and after" illustrations, *Bright Promise* traces causes of cleft lip and cleft palate, describes four major types and follows through on some of the technical advances in corrective procedures.

In pointing to studies of personalities of children with clefts, Dr. McDonald stresses that, as a group, they are as well adjusted as other children.

"Probably of greater importance than the child's cleft in determining his emotional adjustment is the way in which his parents work out their own feeling toward it. An understanding of these feelings—their beginning and how they grow—will help parents direct their feelings into wholesome channels," he says.

Dr. McDonald is a past president of the American Association for Cleft Palate Rehabilitation and a member of the professional advisory committee of both the National and Pennsylvania Societies for Crippled Children and Adults. He is widely known as an authoritative speaker and is the author of many articles and books on speech and hearing.

Copies of *Bright Promise* at 25 cents each may be secured by writing the Publications Office, National Society for Crippled Children and Adults, 2023 West Ogden Avenue, Chicago 12, Illinois.

Maternal Mortality

The Kansas Medical Society, in cooperation with the Division of Maternal and Child Health of the Kansas State Board of Health, has reviewed all maternal deaths in Kansas. For the purpose of this review, a maternal death is defined as, "the death of any woman dying of any cause whatsoever while pregnant or within six months of the termination of the pregnancy, regardless of the duration of the pregnancy at the time of termination or the method by which it was terminated."

Per 10,000

The maternal death rate is based on the number of maternal deaths per 10,000 live births. Over a period of years the Kansas rate has rapidly decreased to a level of 2.3 in 1958, which is well below the national rate of 3.5 for the same year. These vital statistics reflect the maternal deaths due to direct obstetric causes only. The Maternal Mortality Study in Kansas includes deaths due to indirect as well as direct obstetric causes.

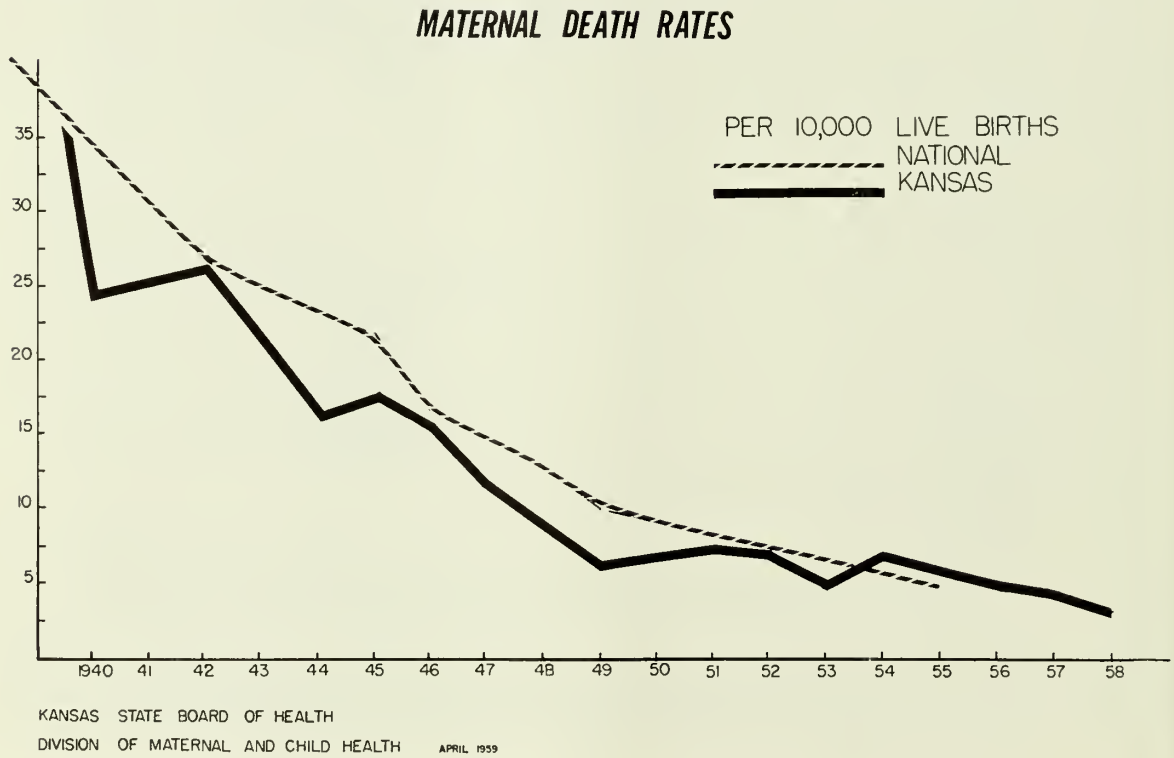
Direct obstetric cause of death: "A death resulting from complications of the pregnancy itself, from intervention elected or required by the pregnancy resulting from the chain of events initiated by the complication of the intervention."

Indirect obstetric cause of death: "A death resulting from diseases before or developing during pregnancy (not a direct effect of the pregnancy) which was obviously aggravated by the physiological effects of the pregnancy and caused the death."

A two-year analysis of deaths due to these two causes is presented in chart form.

A brief outline of the procedure for investigating maternal deaths in Kansas is as follows:

1. When a maternal death is recorded by the Division of Vital Statistics of the Kansas State Board of Health, a copy of the death certificate is forwarded to the Division of Maternal and Child Health for review.
2. The information from this certificate is forwarded to the chairman of the Maternal Welfare Committee of the Kansas Medical Society.
3. The chairman then informs the reviewing physician in the district where the death has occurred that a study of this death is to be made. The attending physician is also notified of this study.
4. The reviewing physician then personally discusses the case with the attending physician and together they complete a comprehensive questionnaire.
5. The reviewing physician or consultant then summarizes the information including an assessment of avoidable factors and returns the questionnaire to the chairman of the Maternal Welfare Committee.
6. The case is summarized and all identifying data is removed prior to the presentation to the Committee. The Committee on Maternal Welfare discusses the case and assesses avoidability.
7. Later, these cases are summarized for the JOURNAL with a comment of the Committee's opinion.



MATERNAL DEATHS IN 1956, 1957, AND 1958
DIRECT OBSTETRIC CAUSES

	1956	*1957*	*1958*
A. Hemorrhage			
Ruptured Uterus	4	2	1
Postoperative	1	1	1
Coagulation Defect		1	
Undetermined	3	1	
Placenta Praevia			1
Abruptio Placenta			1
Rupture of Capsule of Liver			1
B. Toxemia	5	3	2
C. Infection			
Puerperal Reproductive Tract Infection	1	2	2
D. Vascular Accidents			
Phlebothrombosis		1	
Air Embolism			1
E. Anesthesia	2		2
F. Unknown	2	3	
G. Transfusion Reaction			
Lower Nephron Nephrosis			1
Direct Obstetric Totals	18	14	13
Indirect Obstetric Totals	6	9	3
(See Accompanying Chart)			
Total Deaths	24	23	16

MATERNAL DEATHS IN 1956, 1957, AND 1958
INDIRECT OBSTETRIC CAUSES

	1956	*1957*	*1958*
A. Cardiac			
Rheumatic Heart Disease	1		
Other	1	1	
B. Vascular			
Rupture of Intracranial Aneurysm	1		
Cerebro-Vascular Accident	1		1
Coronary Thrombosis		1	
Myocardial Infarction		1	
Thrombophlebitis of Leg		1	
C. Pulmonary			
Pneumonia		3	1
D. Metabolic			
Diabetes	1	1	
E. Other			
Appendicitis	1		
Chickenpox		1	
Acute Psychosis (Hanging-Suicide)			1
Indirect Obstetric Totals	6	9	3
Direct Obstetric Totals	18	14	13
(See Accompanying Chart)			
Total Deaths	24	23	16

Student
THESIS

Endocardial Fibroelastosis: A Review of the Theories of Etiology

JEAN F. LEGLER, M.D., ***Kansas City, Missouri***

So far as is known, endocardial fibroelastosis is fatal, with the patients usually dying in congestive heart failure. The cause of the heart failure most frequently is not discovered clinically, but autopsy discloses a hypertrophied heart with an endocardium that is thickened by fibrous and elastic tissue. The patients are usually children or young infants, but cases in adults have also been reported. The cause of the endocardial lesion is obscure, and has been the subject of numerous theories. It is the purpose of this paper to briefly review these theories.

Fetal Endocarditis

In utero inflammation was, for many years, a popular theory for the cause of the endocardial changes. This was based on observations which were interpreted as the end result of an inflammatory process. The cases were in a so-called healed, inactive phase, and active inflammation was not demonstrated.

In 1941, Gross reviewed the previous literature carefully. He pointed out that the abnormalities which had been considered criteria of fetal endocarditis had also been observed in congenital cardiac defects, which were diagnosed as non-inflammatory after study. He also pointed out that it would be unusual for so destructive an inflammatory lesion in such a small organ to remain so localized. In addition, endarteritic vascular changes should have been present in the scar tissue if the lesions were inflammatory, but these were not found.

In spite of the work by Gross, Stadler, *et al.* in 1950 again suggested an inflammatory etiology for one of their cases. They did not describe the endocardium at autopsy and mentioned only two small areas of pericarditis with "a few round cells" and "a moderate number of histiocytes and lymphocytes." They implied that this may have represented a burned-out inflammatory process which was widespread at one time. Their case is certainly not convincing. In general, most writers no longer consider fetal endocarditis as a valid theory in the etiology of this disease.

Relation to Maternal Infection

A theory that parallels somewhat the one just discussed is that of maternal infection. Influenza, la grippe, rhinitis, infectious mononucleosis, upper respiratory infections, and rubella during a pregnancy which ended in endocardial fibroelastosis have all been reported. However, the vast majority of the mothers have been healthy during the pregnancies that later resulted in endocardial fibroelastosis. In view of the lack of inflammatory cells in the lesion, as indicated above, it would seem logical that maternal infection need not be seriously considered as an important cause.

Relation to Collagen Disease

Hill and Reilly reported a case in 1951 in which many special stains on sections from the heart valves and endocardium revealed what they interpreted as

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This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be best by the faculty at the school. Dr. Legler is now at the Menorah Medical Center in Kansas City, Missouri.

"fibrinoid degeneration." Therefore, they suggested that endocardial fibroelastosis belongs to the collagen disease group. In 1957, Hogg reported a case of a newborn infant with this disease in association with acute disseminated lupus erythematosus. The mother of the child was suffering from subacute lupus erythematosus. He suggested that endocardial fibroelastosis might be a collagen disease "in some instances." Gowing did not feel that Hill and Reilly had real evidence of fibrinoid. Similar changes of fibrinoid degeneration have not been reported by other writers. Widespread changes which are usually noted in the collagen diseases have been absent, or at least not specifically mentioned, in most of the reported cases. Thus, it seems that definite evidence of this being a collagen disease has not been demonstrated. If one agrees that endocardial fibroelastosis is a collagen disease, he is simply placing it in a disease group which is also of obscure etiology.

Differentiation of the Bulbus Cordis

For a slightly different approach to the etiology of this disease, Dennis, *et al.* turned to embryology. In the developing heart, the bulbus cordis is incorporated into the ventricles in early embryonic life, and divides into right and left parts as do the ventricles. The right bulbus becomes part of the right ventricle and infundibulum, while the left bulbus normally atrophies and disappears. The developing endocardial tissue in the primitive bulbus "is endowed with most remarkable formative qualities. It behaves in the developing heart exactly as does the granulation tissue of a healing wound." Dennis, *et al.* therefore suggested that endocardial fibroelastosis of the left ventricle develops when there is overgrowth of the proliferating endocardium of the left bulbus cordis. Organization and contraction of this tissue could result in the thickened endocardium and produce distortion of the valves. When the lesion is located in the right ventricle, this could follow overgrowth of the right bulbus.

Panke and Rottino agree with this hypothesis, but no objective proof has been presented in support of the theory.

Genetic Origin

A review of the theories on the etiology of endocardial fibroelastosis was presented by Rosahn in 1955. He concluded that the best theory was to be found in genetics. Three pieces of evidence were cited. One was a report of male triplets, of which two were identical twins with a common placenta and amniotic sac. Both died of endocardial fibroelastosis. The third triplet had a separate placenta and amniotic sac, and did not have the disease. Next, Rosahn cited a report of two siblings, the second and third children in the family, both of whom died from endocardial fibroelastosis. Thirdly, he reported two additional cases of siblings who died from this disease. From the above evidence, Rosahn felt that a hereditary recessive gene was the most likely cause of the disease.

From a purely statistical point of view, these cases do not, in themselves, prove such a theory. However, Rosahn recognized this when he stated that there was need for the painstaking accumulation of recorded cases with detailed family histories. It should be mentioned that adequate pathologic documentation is lacking in Rosahn's two newly recorded cases.

Congenital Abnormal Development

Closely related to the genetic theory is that of congenital abnormality as an explanation for the cause of endocardial fibroelastosis. When Gross wrote his paper, in 1941, refuting the infectious or inflammatory etiology, he concluded that the endocardial changes could be better explained on the basis of a developmental defect. Weinberg and Himmelfarb reported endocardial fibroelastosis in two siblings. These authors suggested an inherent developmental defect as the cause in view of the lack of inflammation or maternal infection. They did not consider a genetic origin.

A study of endocardial fibroelastosis associated with coarctation of the aorta, adult type, was reported by Oppenheimer in 1953. His study included 19 cases of coarctation in patients under the age of two years. Ten of these had fibroelastosis. Also included in his report were 11 cases of coarctation and hypertension with an age range of seven to 58 years, none of which had fibroelastosis. On this basis, he concluded that fibroelastosis may be an anomaly of development and is not secondary to long-standing hypertension from coarctation.

A review of the literature led Gowing to conclude that endocardial fibroelastosis is a "primary abnormality of fetal development, an endocardial dysplasia of unknown etiology."

Ten thousand autopsies were reviewed by Thomas, *et al.* in 1954. The cases of idiopathic cardiac hypertrophy were studied. They excluded all cases of valvular disease, congenital defects, hypertension, cor pulmonale and coronary sclerosis. Remaining were 20 cases of endocardial fibroelastosis—four under the age of two years (infantile), four from two to 16 years (childhood), and 12 from 16 to 71 years (adult). The clinical and morphologic picture was similar in all cases except for the differences in age and a less severely thickened endocardium as the age increased. They concluded that the lesion was a con-

genital one in all three groups, and that the older patients survived for longer periods because of the decrease in severity of the lesion. In addition, they found that several patients had a family history of obscure heart disease.

On the basis of reports such as these, this disease has often been called congenital endocardial fibroelastosis. But it seems to this writer that this still does not tell us what causes the lesion. Why does the heart develop this congenital defect in the first place?

Relation to Anoxia

Another theory which has received considerable attention is that of anoxia. One of the proponents of this hypothesis is Johnson who, in 1952, studied 210 congenital heart lesions. Twenty-three had fibroelastosis in association with certain cardiac malformations; *e.g.,* anomalous left coronary artery originating from the pulmonary artery, premature closure of the foramen ovale, or valvular atresias such as pulmonary atresia, aortic atresia, pulmonary and tricuspid atresia, and congenital mitral or aortic stenosis. Johnson felt that these lesions could all produce endocardial anoxia, and he hypothesized this to be an important factor in "so-called congenital endocardial fibroelastosis." He compared this to endocardial scarring in the adult with myocardial infarction due to obstruction of the coronary arteries. However, he gave no explanation of what causes the lesion when no associated malformation is present.

Kempton and Glynn pointed out that this disease was a late developmental abnormality, which would seem to indicate that these authors belong in the congenital theory group. But they go on to say that this developmental abnormality is probably due to the response of a normal endocardium to anoxia, circulatory stasis or both. Thus, it is the response of a normal tissue to an abnormal stimulus. This abnormal stimulus usually arises from previous anomalies of development, such as premature closure of the foramen ovale, or valvular abnormalities which include bicuspid aortic valve, aortic atresia, mitral stenosis and insufficiency, and tricuspid stenosis and insufficiency. Thus, they agree with Johnson. When no anatomical cause can be found, they suggest an external factor, such as severe anemia in the mother, may be responsible. In support of their anoxia theory, Kempton and Glynn point out that the ductus arteriosus normally becomes functionally closed, which leads to stagnation anoxia in the intima of the ductus. This is followed by fibroelastic anatomic closure of the ductus. This is a normal course of events, and they suggest that the same end result occurs (*i.e.,* fibroelastic proliferation) in fibroelastosis when there is an abnormal anoxia of the endocardium. But again, this does not explain what the cause is when there is no associated cardiac malformation. Also, they present no evidence to support their theory of external factors, such as anemia in the mother.

Several authors have implied that anoxia results from the blockage of arterioluminal, arteriosinusoidal and Thebesian vessels by the thickened endocardium. However, an intact myocardium in most cases argues against an anoxia etiology, even though Weinberg and Himmelfarb state that death could occur before histologic changes are seen. The theory of blocked vessels may help explain why the left ventricle fails, but it cannot explain why the endocardium becomes thickened, since the endocardial lesion must be present before the vessels can become blocked.

It might be mentioned that one method of treatment for endocardial fibroelastosis has been based on the belief that the basic patho-physiology involved is myocardial ischemia. This treatment is cardiac poudrage; *i.e.,* the instillation of talc in the pericardial sac to stimulate collateral circulation to the myocardium. The cases so treated are too few to adequately evaluate as a series.

Cardiac Hyperplasia and Dilatation

An interesting theory for the etiology of endocardial fibroelastosis is that of Black-Schaffer. In 1957, he presented the thesis that there is a basic fault in the myocardium which makes it weak and inefficient. Prior to birth, the systemic pressure is shared by both ventricles but, after birth, there is a shift of this pressure to the left ventricle. Dilatation of the left ventricle is the result. This leads to an increased diastolic load on an inadequate myocardium. The result is further dilatation with accompanying hypertrophy, and another increment is added to the load. As dilatation and hypertrophy progress, the tension in the endocardium rises, and is proportional to the cube of the increasing radius. (The author showed that, in order to maintain systemic blood pressure, the force exerted by the myocardium must vary directly as the cube of the radius of the chamber.)

It has been suggested by others that "mechanical forces may exert an influence upon the genesis and development of the elastica, especially if those forces are rhythmic and fluctuating." Black-Schaffer, therefore, concluded that the "great tensions which are cyclically accentuated in the endocardium of the dilated heart would be good reason for the genesis of endocardial fibroelastosis." He pointed out that reduplication and increase of elastica in the intima of the smaller muscular arteries is a characteristic response to increased pressure and stretch.

This is an interesting and thought-provoking theory if one is willing to accept the thesis of a basic

fault in the myocardium. What is the basic fault? Black-Schaffer presented evidence that this fault is congential hyperplasia of cardiac muscle. He studied four groups of hearts: (1) Normal, (2) idiopathic infantile cardiomegaly, (3) hypertrophic, and (4) atrophic. He measured growth by means of nuclear density determinations; *i.e.*, the number of nuclei in a constant volume. The nuclear density per unit volume was plotted against heart weight. The resultant curve was a hyperbola, which described normal growth by hypertrophy of extant fibers after the third postnatal month. Hypertrophic cardiomegaly was shown to be an extension of normal growth disproportionate to the individual. Patients with endocardial fibroelastosis were shown to have twice as many nuclei and muscle fibers per unit volume as the normal heart. It was concluded that this is true hyperplasia. Normal cardiac fibers pass through 35 generations. Black-Schaffer suggested one supranormal generation could account for doubling the number of units, as in the hyperplasia of endocardial fibroelastosis. When each normal muscle fiber is replaced by two fibers, each of these will be 21 per cent shorter than the normal fibers. "When one recalls that the energy of isometric contraction of a muscle fiber is a function of its diastolic length, it becomes evident that a hyperplastic heart with a 2:1 muscle fiber substitution may be, a priori, composed of weaker fibers."

Weak Myocardium

To summarize, the basic lesion, congenital hyperplasia of cardiac muscle, results in a weak myocardium. Pressure shifts at birth cause dilatation of the heart, accompanied by increased tension in the endocardium, which leads to the genesis of endocardial fibroelastosis.

After studying this disease in adults, Dyson and Decker stated that the lesion "is probably a compensatory endocardial response to underlying myocardial weakness," but did not agree that this was due to muscle hyperplasia. Instead, they suggested that it resulted from "diverse causes." They pointed out that endocardial fibroelastic thickening is associated (but not constantly) with cardiac hypertrophy and dilatation, congestive failure, vascular hypertension, myocardial scars, general malnutrition, metabolic diseases and valvular defects such as aortic stenosis and insufficiency, mitral stenosis, pulmonary stenosis and tricuspid stenosis. The combinations of these or other factors and the intermediate steps that lead to endocardial fibrosis and elastosis are not known. Dyson and Decker suggested that the endocardium becomes thickened by the accretion of fibrin from the blood stream. This latter idea is based on electron microscopic studies by Still and Boult. Fibrin has an axial periodicity of 230 Å and a fiber width of 100 Å. Collagen consists of fibers 300 to 900 Å wide, with a constant axial periodicity of 640 Å. On electron microscopic examination, elastic tissue appears as thick bands without any fibrillary structure or axial periodicity. Still and Boult studied the endocardium from six cases of uncomplicated endocardial fibroelastosis. They found that the superficial layers consisted of fibers indistinguishable from fibrin. The deeper layers showed the same fibers but in smaller amounts. The predominating fibers in the deeper layers were 800 Å in width with an axial periodicity of 640 Å, corresponding to that of collagen. Material with the appearance of elastic tissue was found in both layers. They concluded that the surface fibrin may be "derived from blood by the incorporation of fibrin deposits."

Several authors have suggested the thickened endocardium may have a splinting action which may limit expansion and contraction of the myocardium and, thus, simulate constrictive pericarditis. Black-Schaffer does not agree with this, since the greater the dilatation of the ventricle, the less must be the interference provided by the endocardium. As the diastolic blood volume increases, the smaller is the ventricular excursion necessary to expel a normal stroke volume. He goes even further and proposes that the thickened endocardium is an adjunct to effective myocardial function. "It supplies a counterforce to the hydrostatic pressure of the blood and the consequent stretch or tension of the heart wall. It supplies the force much more economically than could muscle, in terms of space and oxygen consumption."

Mechanical Factors With Heart Malformations

The articles already discussed presented many cases of endocardial fibroelastosis without associated malformations of the heart. Many other cases have been reported with associated cardiac malformations. Andersen and Kelly have studied this disease from both aspects and found the cases without associated malformations presented a fairly uniform clinical and pathological picture, while those with associated malformations were far more heterogeneous, with considerable variation in the site and degree of endocardial changes.

Mechanical factors seemed to play an important role in those cases with malformations. They studied 129 cases of well-recognized congenital cardiac malformations and found endocardial fibroelastosis in a majority of them. They observed that the distribution of sites of the endocardial thickening follows the same general pattern in various examples of the

same cardiac defect. By comparing the site of fibrosis with the probable current of flow of intracardiac blood in each anomaly, they found that fibrosis occurs where a general increase in intracardiac pressure could be presumed to occur, or where localized jets might impinge or cause vibration of the heart wall.

Johnson also found localized lesions where increased strain might have occurred during life, such as opposite an interventricular septal defect. Andersen and Kelly also noted the degree of fibrosis tended to increase with the age of the patient in each group of anomalies. They also studied a control group of seven cases with fibroelastic endocardial thickening. These cases included rheumatic heart disease, glycogen disease of the heart, chronic glomerulonephritis, and polycystic kidneys. An analogy between endocardial fibroelastosis and cirrhosis of the liver was made, in that "microscopic study of the end result often fails to reveal the primary cause of the fibrosis." These authors concluded that endocardial fibroelastosis, when associated with cardiac malformations, is progressive and is secondary to the mechanical factors resulting from the abnormalities in blood flow caused by the malformations. This seems to be a valid conclusion in view of the previous discussion concerning fibroelastic proliferation in response to increased endocardial tension.

Metabolic Defect

As was stated previously, Andersen and Kelly found that the cases without associated malformations presented a fairly uniform clinical and pathological picture. This group might be called primary endocardial fibroelastosis. It is obvious that this group of cases does not have the same mechanical factors at work as does the group with malformations, because the same alterations in intracardiac pressure and currents of flow are not present. Therefore, these same mechanical factors cannot explain the endocardial thickening in cases without malformations.

Kelly and Andersen studied 17 cases of endocardial fibroelastosis without associated cardiac malformations. There were two instances of the disease occurring several times in the same family. No major non-cardiac congenital malformations were noted. The degree of thickening tended to increase with age, as was seen in the cases with malformations. It is interesting to note that the cases without associated malformations reported by Thomas, *et al.* showed a decrease in the degree of thickening as the age of the patient increased. Kelly and Andersen found in the literature 79 cases without associated cardiac malformations. There were three instances with familial incidence. The only associated non-cardiac malformation recorded was hypoplasia of one kidney. Paul and Robbins reported a left double ureter from kidney to bladder as an incidental finding in one of their cases.

Primary Disease Group

In discussing this "primary" disease group, Kelly and Andersen state that "Scarring in any tissue may be assumed to be a repair process, whether or not the original destructive mechanism is known. In the present group of cases, the striking clinical features of repeated episodes of myocardial failure, with abrupt cardiac death, and the equally striking morphologic changes, with marked chronic dilatation of the left ventricle and endocardial sclerosis, all point to myocardial weakness." They contend that a metabolic basis should be considered, since they could find no morphologic basis for this weakness. They point out that the disease seems to be familial, which is a characteristic of many metabolic diseases. Congenital malformations are rarely associated with this disease. Kelly and Andersen conclude that a congenital familial metabolic defect leads to weakness of the myocardium and secondarily to fibrosis of the endocardium. The deficiency of some enzyme in the metabolism of the myocardium is suggested as the cause. They point out that endocardial fibroelastosis has been reported in association with a number of metabolic diseases; e.g., beri-beri, nephrotic-like syndrome with hypoproteinemia, gargoylism, and glycogen disease of the heart.

The theory of a metabolic defect is an interesting and plausible one. Further studies in the field of histochemistry should be made to determine if an enzyme or other metabolic defect can be demonstrated. Until such a defect is found, this will have to remain merely an interesting theory.

Discussion

The fact that so many theories for the etiology of endocardial fibroelastosis can be found in the literature indicates that the cause of this disease is still unknown. It is true that many writers will accept one or more of the ideas discussed in this review, but this does not mean that any one theory has been proved correct. This simply means that further research is needed before we will know the truth.

On the basis of the articles reviewed in this paper, endocardial fibroelastosis should be considered in two groups—those cases associated with cardiac malformations and those cases of primary endocardial fibroelastosis with no associated malformations.

The conclusions of Andersen and Kelly offer the best explanation for those cases with cardiac malformations. The fibroelastosis is secondary to mechanical factors which result from abnormalities in blood flow caused by the malformations. Those cases

without associated malformations seem to be best explained on the basis of myocardial weakness initiating a series of events as outlined by Black-Schaffer. The weakness leads to dilatation, which causes increased endocardial tension. Fibroelastic proliferation results in an attempt to make more efficient the weakened myocardium. The cause of the myocardial weakness is possibly true muscle hyperplasia, but a metabolic factor should be considered until proven otherwise through further research.

Summary

This paper briefly reviews the various theories for the etiology of endocardial fibroelastosis. These are: Fetal endocarditis, maternal infection, collagen disease, differentiation of the bulbus cordis, genetic origin, congenital abnormal development, anoxia, cardiac hyperplasia and dilatation, mechanical factors with heart malformations, and metabolic defect. Probably, the mechanical factors associated with cardiac malformations and myocardial weakness, resulting from either muscle hyperplasia or a metabolic defect offer the best explanation of the etiology of this disease at the present time.

Menorah Medical Center
Kansas City, Missouri

References may be obtained by writing the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 315 W. 4th Street, Topeka, Kansas.

Cranberry Warnings Cause Undue Alarm

The editor of the *Journal of the American Medical Association* said today that the government's recent pronouncements, reflecting certain scientific data and law pertaining to cranberries, charcoal, and chickens, have caused undue alarm among the American people.

In an editorial, entitled "Cranberries, Charcoal, and Chickens," Dr. John H. Talbott said in the current *Journal* that "if turnips and cabbage were included among the vegetables served or mustard was used as a condiment, minute quantities of aminotriazole might have been ingested by the Pilgrims more than 300 years ago."

Aminotriazole was the dangerous, cancer-causing herbicide which caused the government to impound the nation's cranberry supply shortly before Thanksgiving.

"The analyses, begun in 1956, were sufficiently satisfactory in detecting residues of aminotriazole that the United States Department of Agriculture reported this compound suitable for use on cranberries," the editorial said, adding: "Eighteen months later, early in November of last year, the implication of this compound as a carcinogen prompted withdrawal of all batched cranberries and cranberry products from the open market."

"Little stress," the editorial continued, "was placed on the well-documented evidence that aminotriazole occurs naturally in vegetables, notably cabbage, turnips and broccoli, as well as in mustard or that the antithyroid action is described in current textbooks of therapy."

Continuing, the editorial said:

"Charcoal—carbon black—came under scrutiny on November 20, 1959. Since few persons are addicted to the eating of licorice or black jelly beans, there was considerably less space devoted in the newspapers to the suspicion cast on carbon black than had been afforded cranberries. Chronologically, it was recorded in the Federal Registry of December 9, 1958, that carbon black was a permissible food adulterant. The omission of this substance from the registry one year later brought apprehension to the makers of licorice candy and black jelly beans since each item relies on licorice for flavor but charcoal for the characteristic color. A fortnight after this action a supplementary document by the Food and Drug Administration permitted the processors and the users of charcoal in food and candies a three-month period of grace to produce evidence that burned toast is harmless.

Serum Enzymes as Diagnostic Aids

(Continued from page 60)

SGO-T values are more universally elevated in liver diseases than are SGP-T or LDH. The relative increases in SGO-T, SGP-T and LDH may contribute to the differential diagnosis of hepatic damage.

In 32 patients with carcinoma or sarcoma, LDH, SGO-T, alkaline phosphatase and ChE values are compared. ChE levels are more frequently abnormal than are the other three enzymes. In none of our patients did we find that LDH data contributed to the earlier diagnosis of a malignancy.

SGO-T, SGP-T and LDH are elevated in shock, irrespective of the underlying cause.

Elevated LDH, SGO-T and SGP-T lack diagnostic specificity but we have found that they contribute greatly to the diagnosis of heart and liver disease when judiciously used with other laboratory and clinical observations.

The H. L. Snyder Memorial Research Foundation
1220 Mansfield
Winfield, Kansas

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THE KANSAS MEDICAL SOCIETY

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Dermoid of Ovary With Thyroid Component

Edited by HARRY L. MANNING, M.D.

Dr. Boley (Moderator): The case for today, although rather unusual, nevertheless has several important lessons to teach us. Mr. Broman, may we have the history, please?

Mr. Broman (Senior Student): Mrs. M. G. is a gravida VI, Para IV, aborta II, 75 year old white female whose last menstrual period was 24 years ago. She was admitted to KUMC complaining of bloating, generalized weakness, weight loss, and severe anorexia. Two weeks prior to admission she had been hospitalized in her local community where diagnostic studies were done, and she was then transferred to this hospital. At the time of her admission she was seen to be a small, elderly, chronically ill appearing woman with ascites. No abdominal masses could be palpated and a satisfactory pelvic examination could not be done at this time. A paracentesis was done three days after admission and 2,000 cc. of dark yellow fluid were removed. The following day the patient was examined under anesthesia at which time a cystoscopic examination, a D & C, and a pelvic examination were performed. No positive findings were noted cystoscopically. The pelvic examination disclosed bilateral, firm, mobile, nodular masses. Her initial chest film showed consolidation in the left lower lobe. She became increasingly dull to percussion on the left side of the chest and back and a repeat chest film a week after admission disclosed pleural effusion on the left. On her tenth hospital day a thoracentesis was performed and 950 cc. of fluid were removed and repeat thoracenteses were done on the 15th and 16th hospital day because of reformation of the fluid. The patient was taken to surgery on her 18th hospital day. It has now been six days since her operation, and she has had a satisfactory postoperative course. The only laboratory results of significance were a serum albumin of 2.9 gm. per cent and a serum globulin of 3.15 gm. per cent.

Dr. Boley: This lady was thought to have bilateral pelvic masses, she had ascites and she had fluid in the left chest. Dr. Spanos, would you consider this a Meig's syndrome?

Dr. Spanos: Using the term in the strict sense, Meig's syndrome refers to the association of fibromas and solid tumors of the ovary with fluid in the right chest. Since the patient's fluid was in the left chest, this case does not meet this strict criteria. The term Meig's syndrome frequently is used more loosely to include other pelvic tumors, particularly the malignant tumors, that have ascites and fluid in the chest associated with them, but the pure usage does not include these.

Dr. Boley: Are there any questions?

Student: Was there cytologic examination of the fluid that was removed?

Mr. Broman: Yes, two studies of the chest fluid were done. The first study was reported as having atypical cells suggestive, but not definitely diagnostic, of malignancy. On the second study, the cells were reported as showing changes compatible with malignancy, probably adenocarcinoma.

Dr. Boley: May we have the X-rays?

Dr. Burns (radiologist): There are rather interesting X-rays of this patient. First, the X-ray of the chest taken on the day following admission shows no definite evidence of infiltration or consolidation in either lung field. The right diaphragm is seen clearly; the left, however, is obscured by a homogeneous opacity. These findings could be interpreted as show-

Cancer teaching activities at the University of Kansas Medical Center are aided by grants from the National Cancer Institute, U. S. Public Health Service, and the Kansas Division of the American Cancer Society. Dr. Manning is a Trainee of the National Cancer Institute.

ing fluid in the left chest. A KUB film was taken on the same day (Figure 1). The kidneys are hard to define. It is noted that the gas pattern of the abdomen is located primarily in the center. There is a haze over the peripheral areas of the abdomen. On looking at this area over a bright light one could

Figure 1. KUB film showing an area of radiolucency with peripheral calcification within the pelvis and centrally located abdominal gas pattern.

not delineate the peritoneal fat line. This is the picture of fluid in the abdomen, of an air-containing gut floating, as it were, in the middle and on top of the fluid. Another interesting finding on the KUB film is an area of radiolucency in the pelvis surrounded by an area of calcification. One might think in this case of a dermoid.

Dr. Boley: I am intrigued by this radiolucent area. What in the dermoid does this?

Dr. Burns: Probably fat tissue. It has to be some type of tissue that is more penetrable by X-ray than ordinary soft tissue.

Dr. Boley: Thank you. Dr. Spanos, would you like to discuss the clinical aspects of the case now?

Dr. Spanos: Basically this is a problem of a pelvic tumor with associated ascites and fluid in the chest. The pelvic examination showed that the adnexal masses were bilateral and movable. This in itself does not make a diagnosis of malignancy, but the associated ascites is strongly suggestive. Then, in addition, there is the fact that the cytology of the chest fluid disclosed malignant cells. In a woman of this age with any kind of a pelvic mass, it is mandatory that the patient be explored and the mass be removed if possible. This patient was explored and although I was not present at the operation, I was told by the surgeon that on opening the abdomen tumors involving both ovaries were seen. Tumor appeared to be projecting through the capsule of the mass on the right. Nodules, interpreted as tumor, were present in the cul-de-sac.

The surgery for ovarian tumor is bilateral salpingo-oophorectomy, total hysterectomy and removal of the omentum. Fifty per cent of ovarian malignancies are bilateral. Seeding occurs bilaterally and is thought to spread via the lymphatic channels in the serosal surface of the broad ligament. From here it usually spreads to the posterior surface of the uterus and across both high and also in the region of the uterosacral ligament to the other side and then to the other ovary. So to make an adequate operation you must remove both ovaries and unless there are gross tumor nodules in the cul-de-sac which you have to cut across, the uterus should be removed also.

In this case, the presence of the nodules in the cul-de-sac prevented this type of operation and so only both ovaries were removed. On taking these tumors out, it was obvious that they were dermoids in origin. There was hair and fat present. The next step in one's thinking is to consider what type of malignant degeneration of the benign ovarian teratoma this is representing. Most of the dermoid malignant degeneration is squamous in origin. Approximately 85 to 90 per cent is squamous cell degeneration. There are few cases of adenocarcinoma degeneration of dermoids reported in the literature.

Dr. Boley: Dr. Klionsky, will you present the pathology findings, please?

Dr. Klionsky: On examining the surgical specimen, it was seen that each ovary had a cystic dermoid tumor measuring about 4 x 8 cms. The left ovary was a simple dermoid. All further discussion will be related to the right ovary which had more interesting features. Cystic and solid areas were present. In some areas the cyst wall is lined by keratinized squamous epithelium with underlying sebaceous glands and hair follicles (Figure 2). In other areas the surface is covered by pseudostratified columnar ciliated epithelium. Small necrotic areas are calcified and bone can be seen in places. A large proportion of the solid component of the cyst consists of thyroid tissue. Small microfollicular structures predominate, but larger follicles, representing differentiated thyroid tissue, are found in some areas. Grossly, solid tumor appeared to be projecting through the capsule in one area. Such an area can be seen in one of the micro-

scopic sections (Figure 3), where thyroid tissues has elevated above the ovarian capsule. Although a few cells infiltrate the capsule, a very thin mesothelial lining covers the surface of the tumor. Whether this apparent infiltration is adequate microscopic evidence to diagnose malignancy can be debated. The only definite criteria of malignancy is blood vessel invasion and this is not present in this case. There was gross indication of malignancy seen at time of surgery in the form of nodules in the cul-de-sac. These, however, were not biopsied, so we cannot be certain of their histology.

Dr. Boley: This dermoid had a thyroid component. Dr. Spanos, should we refer to this as a struma ovarii?

Dr. Spanos: It is my understanding that for a dermoid of the ovary to be called a struma ovarii, the thyroid tissue should largely replace the dermoid. Just to have thyroid elements present in small amounts does not make it a struma ovarii. To have degeneration of the thyroid elements that are scattered in the dermoid does not make it a carcinoma of the thyroid in a struma ovarii. There are only about three or four cases of struma ovarii with malignant degeneration reported in the literature when one uses the term in this strict sense. I do not know how many there are when the term is used loosely to include cases of ovarian dermoid with a small amount of thyroid elements and this in turn having areas of malignant degeneration. In either case this is quite a rare tumor as reported in the literature.

Figure 2. Photomicrograph of the wall of the right ovarian dermoid cyst showing keratinized squamous epithelium with underlying sebaceous glands and hair follicles.

Dr. Klionsky: I attempted to find something in the literature in regard to this problem just discussed by Dr. Spanos. The subject of struma ovarii is reviewed by Woodruff and Markley[1] from Johns Hopkins, who suggest criteria. Thyroid tissue is rather common in dermoids and is found in about 13 per cent of them. The incidence of struma ovarii is relatively much more rare. To be considered struma ovarii, according to these authors, the thyroid tissue should occupy 50 per cent or more of the solid material of the ovary, should show evidence of functional hyperactivity, or should show major abnormality in its morphology or behavior, such as spread or metastasis. In the case being discussed today, the thyroid component probably comprised somewhat less than 50 per cent of the solid portion of the dermoid cyst.

Figure 3. Photomicrograph of the right ovarian tumor showing an area where thyroid tissue projects above the ovarian capsule.

Dr. Boley: You spoke of functional activity of the thyroid tissue, Dr. Klionsky. Will you elaborate on this matter a bit further, especially as it might relate to the observation and management of our patient?

Dr. Klionsky: There are approximately 10 reported cases of teratomas of the ovary with struma ovarii in which the patient had definite evidence of hyperthyroidism.[1, 2] The metabolic activity of this tumor can become manifested in many different ways. Evidences of thyrotoxicosis may disappear following removal of the ovary. There are other cases in which, after removal of the tumor, the patient developed goiter in the neck. In still another instance the patient first developed hyperthyroidism with the advent of

metastatic lesions and the hyperthyroidism disappeared after removal of the metastases. Some have had a second operation with partial removal of metastases, and remission of hyperthyroidism.

We should be well aware of the problems in this case and of the need for some further type of investigation of the patient. It must be recognized that we have no definite histologic proof of malignancy or of metastases. This patient should be followed carefully for evidence of hyperthyroidism. I^{131} uptake study and body scan would be of interest when the iodine given with the intravenous pyelograms pre-operatively has disappeared. If there is evidence that cancer is in fact present, then I believe she should be considered for thyroidectomy and subsequent radio-iodine therapy. However, I believe this patient has a fairly good potential prognosis, even without further therapy. Fifty per cent of the patients with thyroid carcinoma in ovarian dermoids have long survivals, even in the presence of metastasis.

Dr. Boley: What would be the purpose of removing the thyroid in the neck in this patient?

Dr. Klionsky: In any patient with carcinoma of the thyroid, the success of radio-iodine therapy is contingent on a large iodine uptake by the tumor. In the presence of a normal thyroid, most of the therapeutic dose would be delivered to it rather than to the tumor. Following removal of the normal thyroid, activity may be induced in a previously nonfunctional thyroid tumor or metastasis which may then be attacked by I^{131} therapeutic doses.

Dr. Boley: Is it not correct, Dr. Spanos, that the malignancies occurring in ovarian tumors are generally found in older individuals, and it is only when they begin to get ascites and lose weight and so forth that attention is drawn to the fact that something is wrong?

Dr. Spanos: That is correct. There are no early symptoms with ovarian malignancy. The ovaries lie in an area where they are more or less freely movable and there are no really vital structures that they press on early. There are no physiologic channels for early symptoms to manifest themselves and these tumors grow for a considerable period of time before they produce symptoms unless they just happen to be found on a pelvic examination. This points up the importance of doing careful pelvic examinations on your female patients. The detection of ovarian malignancies is one of the major problems in gynecologic cancer today. In tumors involving other areas of the genital tract, there generally are symptoms and signs early enough so that one can cure at least a major percentage of the cases, but with the ovary there are no symptoms until it is too late. This is evidenced by our cure rates with ovarian malignancies which are poor. Most places report cure rates of only about 20 per cent up to a high of about 35 per cent for five year cures.

Dr. Boley: In summary then, this is a case of an elderly woman who was found to have bilateral dermoid tumors of the ovaries, one of which had a thyroid component. There were several gross features suggestive of malignancy, but this could not be substantiated histologically with certainty. However, I believe the major points for the student to take with him from this conference are that although this case was a rather unusual one, it is not unusual to have malignancies of the ovary in your older female patients and it must be remembered that there are various types of ovarian tumors.

References

1. Woodruff, J. Donald and Markley, Raymond L.: Struma Ovarii, Demonstration of Both Pathologic Change and Physiologic Activity; Report of Four Cases. Journal of Obstetrics and Gynecology, 9:707-719, 1957.

2. Emge, Ludwig A.: Functional and Growth Characteristics of Struma Ovarii. American Journal of Obstetrics and Gynecology, 40:738-750, 1940.

NOTICE
of
KANSAS BASIC SCIENCE BOARD EXAMINATION

The Kansas Board of Basic Science Examiners will give examinations in the subjects of anatomy, bacteriology, chemistry, pathology and physiology on June 10 and 11, 1960, at the University of Kansas Medical Center, Kansas City, Kansas. Satisfactorily completed applications for examination should be submitted at least 30 days prior to date of examination. Application blanks and other information can be obtained from Dr. L. C. Heckert, Secretary of the Kansas Board of Basic Science examiners, Pittsburg, Kansas.

The Kansas Medical Society
101st Annual State Meeting

Hutchinson, Kansas

Baker Hotel

The President's Message

DEAR DOCTOR:

An important division of the executive branch of the national government is the Department of Health, Education and Welfare. The matters confronting this department are the concern of each of us as physicians.

Welfare has for the past 15 years been of great concern to the Kansas Medical Society. The history of the welfare plan in Kansas, and its problems, is too well known to warrant review here. An article by the present director of the State Welfare Board is printed in the January issue of the JOURNAL OF THE KANSAS MEDICAL SOCIETY, which I believe will give you a good résumé of the past and present situation.

At a recent meeting the Council of The Kansas Medical Society reaffirmed the profession's willingness and intent to continue to care for the indigent as we have in the past. Any plan purporting to improve the care of the indigent will be studied conscientiously by this Society. Until a plan is submitted which will bring this about, the doctors of Kansas will continue to furnish high quality medical care, regardless of the individual's ability to pay. Each one of us has a responsibility to make this pledge remain true and not become a hollow phrase. Your Council again repeated its belief that welfare programs should be regulated on local and not on state level.

Elsewhere in this issue, on the editorial pages, you will find information on the state of education in Kansas. I would urge you to read the editorial and act accordingly. Certainly no other group could have a more consuming interest in education than the medical profession. Many physicians are active on their local school boards, college and university boards, as well as other educational institutions. They are to be commended. However, many of us have been too busy over the years to take more than a passing interest in our schools. We are suddenly becoming aware of the great population explosion and the need for acceleration of our program of procuring teachers and facilities for training our youth. The situation in Kansas leaves much to be desired. Our state schools need new buildings. The faculties need to be strengthened and various fringe benefits, such as retirement and pension funds must be granted so that the faculty members may have a sense of security and that new teachers can be recruited and attracted to Kansas schools. As physicians we are particularly concerned about the medical school and must interest ourselves to see that appropriations by the legislature are sufficient to maintain its present high standard. At the present time the Medical Center is about 67 per cent self supporting. In fact, the Medical Center receives less tax money from the state than any other medical center in the United States.

However, much as we are interested in medical education, we must be concerned also with the training of technicians, nurses, physiotherapists, engineers, lawyers, teachers and those who enter other professions. For this reason I urge you to support the schools in your community, and our state institutions by letting the proper authorities know of your interest. Urge your friends and relatives to support their schools and to seek needed facilities. Your influence will do much to bring about a favorable outcome.

Health, of course, has been a matter of utmost concern to our profession. It goes without saying a nation, in order to be great, must be a healthy nation. This is our responsibility. In this endeavor we have succeeded so well that our nation under our present system of medicine has produced the highest health standards of the world with unsurpassed medical care available to one and all. There are those who would shackle our profession with governmental control and, if experience in other countries is any criterion, with subsequent deterioration of efficiency and quality of medical care. We must be alert to these threats and let our lawmakers know our stand on these matters, if we are to avoid this pitfall.

So—health, education, and welfare are matters in which we all have a great stake. Our future and our children's future depend on what we do about them—now.

Fraternally,

Glenn R Peters M.D.

President

Education in Kansas

The Council committed the Society and its individual members to a new project when it endorsed active support by the medical profession for the improvement of education in Kansas. It is hoped each individual member will support this program in whatever manner he considers to be locally effective.

This is especially significant because it represents a rare instance when any organization has engaged in an activity apart from its own interests. The Council made its decision on the basis of two principal considerations. The first of which is the long history of medicine's support for high educational standards and the fact that the physician is certainly the product of the most carefully controlled educational process in society. Second, was the belief that this would be of public relations advantage generally and a sound means for obtaining popular support for the medical school.

No one can deny the importance of a good elementary education as a foundation for college work, therefore this project is a sincere effort to engage in an activity in which the profession has a genuine concern and in which it is peculiarly fitted to express an interest.

Following an introductory statement concerning the Council action, Doctor Peters gave this information to the press.

"Our decision was easy. What sounder investment can we make for the future of this state than to assure ourselves the next generation will be better educated than we were? If we are not willing to provide for every child the opportunity to learn all his ability and interest require to enable him to prepare for a lifetime of activity what future shall we provide in its place?

"We are referring to education at all levels because each scholastic division depends upon the performance of those below. The high school student who was not taught arithmetic in the second grade will never become the atomic scientist he might otherwise have been because he lost a foundation that can never be entirely replaced.

"As doctors we are, of course, interested in the University of Kansas School of Medicine. We take pride in this school and want to point out among many firsts which could be named, that this school in Kansas taught more graduate hours last year than any other medical school in the United States. This represents continuing education offered by any person holding a license from the Healing Arts Board to practice medicine and surgery. It means the Kansas University School of Medicine is performing a superior service to the people of Kansas by assuring them their doctor keeps abreast with all medical advancements.

"So of course we are determined this school shall continue to train the young men and women who choose medicine as their life's work to become the finest doctors anywhere.

"But, however important that is to us professionally, as citizens we are equally determined Kansas shall educate the finest attorneys, the best farmers, bankers, teachers, engineers, nurses, business leaders, and in fact, the best there is in every field.

"Therefore we cannot limit our attention to our special interests alone. No group can afford to do so. We must assure ourselves, and never become complacent until we are sure, that every child has the opportunity of an education. Wherever we cut corners with the opportunity to learn we sacrifice by that much whatever the future might produce. It is not merely that we might like to do more, it becomes a matter of survival, the cold hard fact that we simply cannot afford to do less.

"To do this job we recognize we must look to the future. We do not need to speculate about the college enrollments of 1970. We can count them. They are in the grade schools today being prepared for the college courses they will take in the future. Therefore we must act now to be ready when they arrive,

ready with classrooms and libraries and teachers and ready with laboratory equipment too. But not only must we be ready in that way, we must today teach these children in the grades and in the high schools so they will be equipped to take advantage of their college education when that time comes.

"So perhaps the lower level of education is the most important after all and it was this realization that prompted the decision of The Kansas Medical Society to exert its effort toward assisting the broad area of education in this state. As citizens we are ready to join our effort with any who believe this to be important. We invite everyone to come along so we may be assured of protecting the best investment we will ever make for our future—our youth."

The 1960 Annual Session

Plans are complete for the State Meeting which will be held in Hutchinson beginning Monday, May 2 and closing on Wednesday, May 4. A change in the usual state meeting format provides time and opportunity for many special events in addition to the complete scientific program. The host society, under the leadership of Dr. Jack Perkins, general chairman, has arranged a most interesting series of events which the Society will enjoy.

It is time now to make reservations which should be handled individually. There are 12 or 14 hotels and motels from which to select. The following were particularly recommended:

The Baker Hotel has 175 rooms, ranging in price from $5.50 to $21.50.

The Leon Hotel, 14 East 2nd Street, has 71 rooms, $4.00 to $8.50.

The Beauty Rest Motel, 2927 East 4th Street, has 19 units ranging in price from $4.50 to $8.00.

The Sunset Motel, 2605 East 4th Street, has 27 units, ranging from $5.00 to $11.00.

The Rambler Motel, 3005 East 4th Street, has 18 units, ranging from $6.00 to $16.00, and

The Wheatheart Motel, South of the city on K-17 has 27 units ranging in price from $5.00 to $21.00. Other motels and hotels are available for use during this convention. Should these be filled, additional names will be supplied upon request.

This year there will be less congestion than previously because the meeting is planned without exhibits. Many reservations previously taken by employees of exhibiting firms will now be available to physicians attending this session. It would be advisable for the sake of obtaining preferred accommodations that reservations be sent in now.

With the exception of the first House of Delegates meeting, which is one block away and the athletic events, all other activities will be held at the Baker Hotel. This hotel was built for conventions and rooms are excellently situated to accommodate all meetings.

A complete program will be published in a succeeding issue of the JOURNAL. The briefest summary is as follows.

On Monday, May 2, 1960, the House of Delegates will have a breakfast at the Town Club, 110 North Poplar, at 7:00 a.m. Beginning at 9:30 that morning and concluding at 12:30 p.m. general sessions will be held with scientific speakers presenting papers in the Ballroom of the Baker Hotel. The luncheon period is open to enable everyone a free period for relaxation, visiting with their friends or for shopping excursions.

At 1:30 p.m. in the afternoon the sports events begin; the golf tournament will be at the Prairie Dunes Country Club. The shooting contest at the Ark Valley Rod and Gun Club. At 7:30 that evening the sports banquet will be held at the Prairie Dunes Country Club.

On Tuesday, May 3, the scientific program will begin at 9:30 in the morning in the Ballroom of the Baker Hotel and will continue until 4:00 p.m., except for a free period at the noon hour. At 7:30 p.m. the annual banquet will be held in the Ballroom in the Baker Hotel.

On Wednesday morning, May 4, specialty groups will hold individual meetings in six or eight private rooms on the Mezzanine floor at the Baker Hotel. At 12:30 p.m. the House of Delegates will conduct its second session beginning with a luncheon in the Ballroom at the Baker Hotel.

Dr. C. R. Openshaw, program chairman and his Committee, have planned a scientific program of exceptional interest consisting of individual speakers and panel discussions. Announcement of speakers' names will follow in a future issue of the JOURNAL.

The streamlined meeting as outlined above still provides for the scheduling of all events requested by the Society. It is hoped a large attendance may be obtained to make this first annual session in the new format a success. Again, all members are requested to make their hotel reservations now to assure themselves of the type of accommodations they desire.

The Forand Bill

Previously announced dangerous to the American way of life in the threatened passage of the Forand Bill it still holds everyone interested in the preservation of free enterprise. They should at this time acquaint their Congressmen with their views on this legislation. There is, in addition to the above, an increased hazard that the principles embodied in the

Forand Bill might be broken into segments and acted upon separately. The problem, therefore, now is not only to call attention to H.R. 4700, but to be certain each Congressman and Senator understands the inherent danger of enacting into law not only this Bill, but the various principles contained therein. Mr. J. H. Abrahams, president of the Kansas Health Insurance Council authorized the reprinting of the following letter. With only slight changes as are necessary to personalize the message, Mr. Abrahams sent this letter to all Chambers of Commerce and to all Kansas Congressmen and Senators. It was believed to be of sufficient interest to the medical profession that it is reprinted with the author's permission.

. . . "We request your active support in opposition to legislation to be presented in the next Congress which would provide that irrespective of need, certain hospital, nursing home and surgical benefits would be paid by the Social Security System to beneficiaries eligible to receive OASDI payments. The Forand Bill (H.R. 4700 of the 86th Congress) is the best known of similar measures previously presented before Congress. This type of legislation has been proposed out of a genuine concern for the problems of older people in financing health care costs but, unfortunately, such legislation would not accomplish the intended purpose and would ultimately have tragic consequences.

"The proponents of such legislation assume that aged people are, for the most part, unable to meet their health care costs because of inadequate income and insufficient resources and, further, that voluntary health insurance is either not available to most aged people or is priced beyond their reach. Based on these assumptions, it is argued that the government must assume responsibility for health care costs of the aged.

"We feel that these assumptions are unsound and that there are many reasons why this type of legislation should not be enacted. Our reasoning was best expressed by Mr. E. J. Faulkner, Chairman of the Health Insurance Council, in his testimony before the House Ways and Means Committee last July and is repeated briefly following:

1) **It is unsound to assume that most of the aged population of our country are not able to finance their health care costs.** Statements to the effect that most aged people are unable to defray health care costs have been made repeatedly, but never proved. As a matter of fact, there is a great deal of evidence to the contrary.

2) **It has never been established that aged persons who required and sought needed health care have been refused it.** No record has been produced of denial of care because of inability to pay.

3) **Voluntary health insurers are meeting the increasing demand for health care financing for the aged.** After eliminating from the insurable potential, 4,000,000 people over age 65 who, for one reason or another, do not need or want health insurance, it is estimated at the end of 1957 that the aged who need and want health insurance and had such insurance would be in excess of 50 per cent. The record of extension of voluntary health coverage to senior citizens is truly phenomenal and is continuing at an even more rapid pace.

4) **Were the scheme proposed in the Forand Bill (H.R. 4700 or similar legislation) established, there would be imposed upon our already overtaxed citizenry another heavy and unnecessary tax.** Regardless of cost estimates by proponents of this type of legislation, sound actuarial studies set the cost in 1960 at from $2,074,000,000 to $2,387,000,000 while by 1980 they would range from $5,987,000,000 to $7,660,000,000. These figures would be expressed as a level premium of from 2.32 per cent to 2.97 per cent of taxable payroll.

The following is the schedule for increasing contributions under our present Social Security law and does not take into account the added cost contemplated by H.R. 4700 or similar legislation:

	Employer Contr. %	*Employee Contr.* %	*Self-Empl.* %
Jan. 1, 1959-Jan. 1, 1960	2½	2½	3¾
Jan. 1, 1960-Jan. 1, 1963	3	3	4½
Jan. 1, 1963-Jan. 1, 1966	3½	3½	5¼
Jan. 1, 1966-Jan. 1, 1969	4	4	6
Jan. 1, 1969 and thereafter	4½	4½	6¾

5) **The Forand Bill (H.R. 4700 or similar legislation) poses a serious threat to the future of the present social security system.** The proposed benefits are inconsistent with the basic pattern and philosophy of OASDI. We believe the additional tax imposition will undermine the long-term willingness of taxpayers to pay for social security, and could conceivably make it extremely difficult for Congress to adhere to the sound policy of maintaining the social security system through special taxes levied on those covered and their employers, rather than subsidizing the scheme out of general Federal reserves.

6) **The Forand Bill (H.R. 4700 or similar legislation) would lead to an all inclusive compulsory health insurance plan.** Advocates of the Welfare State have long planned and worked for the establishment of a comprehensive system of compulsory health insurance here with its inevitable concomitant, the socialization of health care. This type of legislation would be the first step—the rest would follow.

7) **The Forand Bill (H.R. 4700 or similar legis-**

lation) would fail completely of its apparent purpose. It fails to solve the only real problem of financing health care costs of the aged—that of the presently indigent aged. Over 4,000,000 men over age 65 and women over age 62 are not covered by or eligible to receive OASDI benefits—approximately one-third of the aged group. A large part of this group are people who have the greatest difficulty in paying their health care costs.

8) The Forand Bill (H.R. 4700 or similar legislation) would have a painful effect on our entire economy. Obligations of the government should be reduced and not increased.

9) Enactment of the Forand Bill (H.R. 4700 or similar legislation) would destroy voluntary health insurance. This industry is presently serving 124 million Americans well today. Enactment of this type of legislation would seriously impair, if not destroy, the industry. We can't compete successfully with the government.

"Let's keep health insurance on a *voluntary* basis and not put it on a *compulsory* basis. Voluntary health insurance has the capacity and the will to provide the aged, as well as the other segments of the population, with a sound and economic means of paying health care expenses. President Eisenhower recently said: 'If the time ever comes when a large number of our citizens turn primarily to the government for assistance in what ought to remain a private arrangement between doctor and patient, then we shall all have suffered a great loss.' Believe me, enactment of Forand type legislation would be the logical and immediate forerunner of that time.

"The social benefit system of the United States has developed rapidly since 1935 when the Social Security law was enacted. Each Congressional election year for the past decade, the scope of Social Security benefits has been expanded and new benefits added. There are vigorous and vocal pressure groups demanding legislation that will provide compulsory health insurance. They will succeed unless there is an informed public opinion aroused against the proposal. It can be if the facts are known, and 1960 is the critical year. I would welcome an opportunity to discuss this type of legislation, and its harmful effects, in more detail with you."

Curbing the Population Explosion

Each day of the year, experts claim, adds 100,000 more lives to the globe's population. At that rate, the world population will zoom to seven billion by the year 2000. Is it any wonder that leaders of many lands see in this surge of population the threat that mankind may overpopulate itself into starvation?

Consequently, birth control as an official policy financed by public funds is receiving wider and wider attention throughout the world. In an article in its February issue, Methodism's family magazine *Together* summarizes the direction this movement is taking.

India, for instance, has instituted a government-supervised program of disseminating birth control information for which $1 million has been allocated for the next five years. In Japan, 40,000 midwives and nurses are giving contraceptive instruction at 900 health centers. However, abortion, legalized in 1948, is still the nation's most prevalent birth-control practice.

Pakistan's president has characterized family planning as a governmental responsibility. In Ceylon, where the government has increased its aid to the volunteer Family Planning Association, almost 100 clinics and centers are in operation. Additional impetus has been given the program there by a $28,000 pilot-study grant from Sweden.

In Hong Kong and Malaya also family-planning organizations have received government help. The United Arab Republic and several African governments likewise have given encouragement, financial and otherwise, to birth-control programs.

Voluntary associations are working in Europe, including some dominantly Roman Catholic countries. Even behind the Iron Curtain, Poland and Russia are giving attention to population control.

Here in America, according to *Together*, more and more churches are taking a stand in favor of planned families.

The Methodist Church, through its General Conference of 1956, adopted this position: "We believe that planned parenthood, practiced in Christian conscience, may fulfill rather than violate the will of God."

The United Lutheran Church has said this: "Husband and wife are called to exercise the power of procreation responsibly before God. This implies planning their parenthood in accordance with their ability to provide for their children and carefully nurture them in fullness of faith and life."

The Augustana Evangelical Lutheran Church has put it in these words: "The means which a married pair uses to determine the numbers and the spacing of the births of their children are a matter for them to decide with their own conscience . . ."

The Congregational Christian Churches, through their General Council, have taken this stand: "We favor the principle of voluntary childbearing, believing that it sacramentalizes physical union and safeguards the well-being of the family and society."

The Protestant Episcopal Church has said: "We endorse the efforts being made to secure for licensed physicians and medical clinics, freedom to convey such information as is in accord with the highest principles of eugenics and a more wholesome family life."

The Business Side of Medicine

Your Life Insurance Must Be Planned

FLOYD F. WEHRENBERG, ***Kansas City, Missouri***

THE 1954 REVENUE CODE and subsequent regulations pertaining to life insurance are important to your estate planning. Prior to 1954 life insurance proceeds were included in your gross estate thereby increasing estate taxes. It is now possible to avoid this in part by transferring the ownership of a portion of your insurance to your wife or children. You can still pay the premiums on those policies but have the proceeds excluded from your estate if the policies are properly modified.

No Ownership May Be Retained

In order to qualify insurance under these provisions, you must be certain that none of the incidents of ownership are retained by you. What are the incidents of ownership? They include the right to borrow on a policy, pledge or assign it as collateral, surrender it for cash, change the beneficiary, or change the ownership. If you retain none of these you may pay the premiums on the insurance but it will not be included in your estate. On a $10,000 policy transferred in this manner, the tax savings can range from $300 to $7,500 depending upon the size of your taxable estate.

If you wish to transfer policies, your agent should be so notified. It is important to remember, however, that transfer of old policies may create a gift tax problem and for this reason such a transfer should be made only upon the recommendation of your estate attorney.

This is another method by which estate taxes can be minimized. Your course of action should be governed by the combined advice of your insurance counselor and the attorney who handles your estate planning.

Coordinating Life Insurance With Other Assets

In the average case, life insurance is the major asset in a professional man's net worth. It is important, then, both in Estate Planning and Retirement Planning that life insurance be given proper weight in relation to other holdings. Whatever your reason may be for the life insurance carried, it must be remembered that this is a capital asset that will produce a fixed number of dollars, either upon death or at retirement. Your life insurance should be coordinated with your other assets in such a way that maximum benefits may be obtained from all property owned.

Let us use the illustration of Doctor A who now has insurance that will provide a clean-up fund, mortgage funds and will pay Mrs. A $150 monthly for life in case of his death. Doctor's goal is $300 monthly income for his wife in case of death. It would seem that Doctor has a need for a substantial amount of additional insurance. What has not been considered, however, is that Doctor's medical building will provide additional income for his wife and he owns substantial amounts of stocks and bonds that will further supplement his wife's income.

A second illustration might be the case of Doctor B. This Doctor is planning for his retirement. It is determined that he will have to invest $175 monthly to age 65 equally in fixed and variable investments to achieve his retirement goal and maintain proper bal-

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Mr. Wehrenberg is Missouri-Kansas manager, Professional Management Midwest, 4010 Washington Street, Kansas City, Missouri.

ance in his investments. What has not been considered is the potential $40,000 fixed cash value of his life insurance at age 65. These cash values will reduce the required monthly investment or will increase available retirement income. More important, proper consideration for these cash values will affect the ratio of his future investments in fixed and variable contracts.

Whether you are planning your estate, programming your life insurance, or planning for retirement, the importance of coordinating life insurance with other assets cannot be overemphasized!

Artists Now Part Of Medical Team

In a good many hospital operating rooms today you are likely to find a man or woman clad in gown, cap and mask, but carrying an artist's sketch pad.

They are the highly-trained medical artists who are an integral part of the medical team we admire so much for the outstanding advancements being made in medical science.

The medical illustrator brings to his art a knowledge and concentrated study that we rarely think of when we look at medical illustrations. He must have not only knowledge and skill in the fine arts, but a well-rounded background in the sciences—physics, chemistry and animal biology.

These medical artists are not only concerned with drawing medical illustrations. They must do display work for visual education, photography for medical research and teaching, and moulage—a molding and casting of three-dimensional subjects.

An artist may be called on to go to the bedside of a patient to make a water-color drawing of lesions of the patient's thumb. He may have to build an enlarged teaching model of the human eye of plaster, wax, and rubber, with transparent plastic as a lens.

Clad in gown, cap and mask, the artist can be found in the operating room making fast step-by-step sketches of the surgical process. And he must know the principles and use of photography.

The making of three-dimensional models is an especially fascinating process. A wax hand, for example, is made by plunging a hand into a bag of agar (a solidifying agent) until a solid mold is formed. Then wax is poured into the mold and the finished product is painted to look like flesh with a skin rash or other particular disorder.

Or the moulage may be a spinal cord, or any other organ of the body or combination of them including models of the entire anatomy.

Another use for the skill of the medical artist using moulage is in the area of making cosmetic replacements. Take for example a patient who has a growth on one ear. His condition is such that the ear must be removed.

Under certain circumstances, when plastic surgery cannot be continued, the medical illustrator may be called on to prepare a cosmetic restoration. In this case a mold is made of the patient's remaining ear. The cast is then used as a guide for modeling the restoration. The finished product is formed out of soft plastic and is worn by the patient. The work of a skilled medical artist is so remarkable that very few persons will notice such a cosmetic replacement.

MAX BROEDEL, THE PIONEER

The present high plane of medical illustrating in the United States is due primarily to the influence of one man, who came to this country from Germany in the 1890's, and in 1911 organized at Johns Hopkins, the first medical art department in the country.

This was Max Broedel who worked as illustrator for Howard A. Kelly, the great Johns Hopkins gynecologist. Although handicapped by a lack of medical knowledge, Broedel was taught by Dr. Kelly, who permitted him to study as he worked.

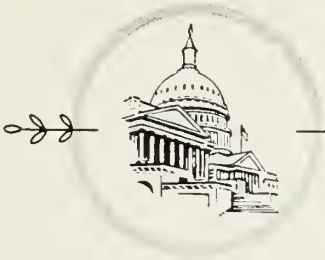
He later spent 30 years as head of the medical art department, endowing his students with the techniques and excellence that characterized his work. These students put in three years acquiring the basic knowledge they will need in their work. Because they must be as familiar with human anatomy as the doctor himself, many of their studies parallel those of a regular medical student. Some of Broedel's students have started other schools, and today there are several schools training medical illustrators.—*Emporia Gazette.*

THE KANSAS MEDICAL SOCIETY

Annual Meeting May 2-4, 1960

Hutchinson, Baker Hotel

Make Your Reservations Early



Washington HIGHLIGHTS

This summary of Washington news is prepared by the A.M.A. Washington Office for distribution to state medical journals.

OVERSHADOWING ALL OTHER DEVELOPMENTS FROM the standpoint of the medical profession was the flat prediction from a high Administration official and key lawmakers that Congress this year would vote some sort of liberalization of the Social Security program.

There was general agreement that Congress would broaden the Social Security plan for permanently and totally disabled persons by removing the requirement that a person has to be at least 50 years of age before receiving such benefits.

Further Liberalization

However, there were forecasts of even further liberalization. House Speaker Sam Rayburn (D., Texas) said monthly cash benefits also may be boosted. On the other hand, the House leader said he believed a majority of the House Ways and Means Committee were opposed to the disputed Forand bill that would finance partial health care for the elderly through higher Social Security taxes at an estimated extra cost of $2 billion annually. As a result, he said he did not think "there was a great deal of chance for it." But the AFL-CIO and some Congressional backers of the highly controversial bill were urging Congress to approve it this year.

Arthur S. Flemming, Secretary of Health, Education and Welfare, asserted that the Administration is planning to offer a program aimed at assisting needy aged to meet health bills, but gave no details. The official noted that the Administration has firmly opposed the Forand-type approach on grounds it would destroy the rapid progress in meeting the problem through private means. But Flemming, in a speech before the American Association of University Teachers of Insurance, said the Administration has an obligation "to stay with it" until it arrives at a plan.

Congress has extended the Social Security program every presidential election year since 1948, and 1960 appeared to be no exception. Whether or not the issue of medical care for the aged will be included was one of the big question marks early in the session.

AMA Pledges

Shortly before Congress convened, the Boards of Trustees of the AMA and the American Hospital Association, in a joint resolution, pledged to "mobilize their full resources to accelerate the development of adequately financed health care programs for needy persons—especially the aged needy—" at state and local levels.

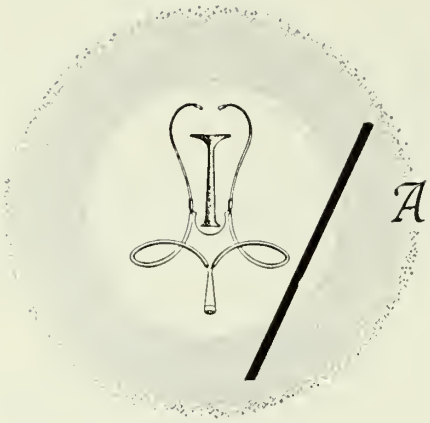
The Boards said Forand-type legislation is "not designed to assist the needy, since they apply to all Social Security beneficiaries and exclude the majority of needy persons, who are not eligible for Social Security benefits."

Following the action, Dr. Louis M. Orr, AMA President, and three other AMA officials—Dr. E. Vincent Askey, AMA President-Elect, Dr. F. J. L. Blasingame, Executive Vice President, and Dr. Ernest B. Howard, Assistant Executive Vice President—visited Vice President Richard M. Nixon at his Washington Office. They told the Vice President that by the end of this year an estimated 60 per cent of the nation's aged persons who want and need voluntary health insurance will have it.

Mr. Nixon, according to the officials, was delighted to receive the information and "very much interested" in the program of voluntary health insurance for the aged.

New Tax Deductions

Physicians who are officers of qualified clinics would be entitled to deduct as business expenses money set aside for their retirement under a proposed regulation of the Internal Revenue Service. The decision climaxed a five-year effort of a group of Montana physicians to secure such tax treatment, and marked an important tax development for physicians who operate clinics. Self-employed physicians continue to be barred from similar tax treatment, though there is legislation before the Senate Finance Committee that would afford them tax deferrals on funds set aside for retirement.



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the DOCTOR'S CALENDAR. *Notice of the session is posted in advance to allow the physician time to make preparations.*

The Fourth Postgraduate Course on Fractures and Other Trauma, sponsored by the Chicago Committee on Trauma of the American College of Surgeons, will be held April 27 through April 30, 1960, at the John B. Murphy Memorial Auditorium, 50 East Erie Street, Chicago.

The Course for 1960 is dedicated to the memory of Dr. William R. Cubbins. An outstanding leader in fractures and other trauma, Dr. Cubbins was associated for many years with the Northwestern University School of Medicine, the Stritch School of Medicine of Loyola University, and Cook County Hospital.

Teachers prominent in the field of trauma from the five Chicago medical schools, and chiefs of services from leading Chicago hospitals will lead discussions on all phases of trauma: Injuries to the eye, face, neck, chest, abdomen and extremities; repair of bone and cartilage in trauma; aseptic necrosis; urological complications of fractures; intramedullary fixation of fractures; bone grafts; and other related subjects.

There will be panel discussions on low back pain, abdominal injuries and fractures in children. One evening will be devoted to clinical presentations. A special feature this year will be a program of practical demonstrations on traction, office technique of aspiration and injection of joints and bursa, transportation and emergency splinting, supination treatment of Colles fractures, strapping of the back and ankle, and manipulative reduction of common dislocations. Illustrated lectures, lantern slide demonstrations, audio-visual programs and question-and-answer periods will be held.

Registration fee will be $50. Residents will be admitted free upon presentation of a note of identification from chief of service.

Dr. Sam W. Banks, Chairman of the Chicago Committee on Trauma, is Director of the Course. Inquiries should be addressed to Dr. John J. Fahey, who is chairman of the Committee on the Postgraduate Course on Fractures and Other Trauma.

The 28th annual Alumni Postgraduate Convention of the College of Medical Evangelists is scheduled for February 28 to March 3 in Los Angeles.

The five-day meeting will be held at the College (Feb. 28, 29) and at the Ambassador Hotel (March 1-3) and will feature six guest lecturers plus a prominent Los Angeles attorney and a number of faculty members from the USC, UCLA, and CME Schools of Medicine.

The first two days will consist of a series of refresher courses to be held in classrooms and laboratories on CME's Los Angeles campus. Physicians registered for these courses will receive Category I credit from the American Academy of General Practice.

Beginning Tuesday, March 1, the convention moves to the Ambassador Hotel for the three-day scientific assembly. Included in this program in addition to lectures, are luncheon roundtables and panel discussions.

Heading the list of guest lecturers is Captain Norman Lee Barr, director, Astronautical Division, Bureau of Medicine and Surgery, U. S. Navy, Washington, D. C. Subject of Dr. Barr's lecture, set for 9 a.m. Tuesday, is "Space Medicine."

Some 1,000 physicians attended last year's convention and a similar number are expected to register for this meeting.

The Pan American Medical Women's Alliance is having its Seventh Congress in San Juan, Puerto Rico, June 3-8, 1960 at the Condado Hotel.

For those who are not familiar with the purposes of the Alliance, I quote from the Constitution, Article II:

"The purpose of this Alliance is to bring the medical women of North, South, and Central America, and the Caribbean area into an association with each other for mutual improvement; encouragement for their participation in all branches of medical public welfare; for the exchange of ideas and of improved treatment; to facilitate social and cooperative relations; to assist in the further education of its members through exchange fellowships and loans; and to generally forward such constructive movements as may be mutually beneficial or properly endorsed by the medical associations of our several countries."

An interesting program is being planned for this Congress with Dr. Cornelia Carithers of Jacksonville, Florida, as Program Chairman and Dra. Guadalupe Ayala Uribe of Mexico and Dra. Tegualda Ponce of Chile as co-chairmen. Any member of the Alliance is invited to present a scientific paper at this meeting. The Scientific Sessions will begin on Saturday morning, June 4, with the last scientific session being held Wednesday morning, June 8. Those who wish to attend the Specialty Meetings in Miami, preceding the American Medical Association Meeting, will have ample time to get to Miami for those meetings.

At present, the registration fee has not been set but it is planned to have this fee cover registration fee for the Congress as well as the lunches and dinners. Breakfast and rooms will be on your own. Rates for the hotel rooms are not yet available. Plans should be made to arrive in San Juan on Friday, June 3. A welcoming dinner is being planned for Friday evening. Dra. Carmen Mejia, local arrangements chairman, is arranging a sight-seeing tour for Wednesday afternoon, June 8.

No plans have been made for a pre- or post-convention tour. Each individual will make her own plans for visiting the Islands if she so wishes.

Applicants for membership to the Alliance should be made to Dr. Eva Cutright, 458 Beall Avenue, Wooster, Ohio, Treasurer. The fee is $4.00 for biennium 1959-1960.

The next scheduled examinations (Part II), oral and clinical for all candidates will be conducted at the Edgewater Beach Hotel, Chicago, Illinois, by the entire Board from April 11 through 16, 1960. Formal notice of the exact time of each candidate's examination will be sent him in advance of the examination dates.

Candidates who participated in the Part I Examinations will be notified of their eligibility for the Part II Examinations as soon as possible.

The deadline date for the receipt of new and reopened applications for the 1961 examinations is August 1, 1960. Candidates are urged to submit their applications as soon as possible before that time to Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.—American Board of Obstetrics and Gynecology.

The New York University Postgraduate Medical School offers the following courses in Medicine in February and March of 1960:

DIAGNOSTIC CARDIAC AUSCULTATION

A full-time, 3½ day course, Wednesday through Saturday noon, February 24-27, 1960.

Recent testing by the use of "unknown" type recordings of heart sounds and murmurs has shown that in general, physicians recognize less than half of the simple common auscultatory phenomenon encountered in daily practice.

This course, utilizing tape recordings, individual electronic stethoscopes and visual patterns of sound, is designed to teach rapidly the recognition of sounds and murmurs and stresses their correlation with the underlying hemodynamic phenomenon. The entire field of cardiac auscultation including valvular and congenital types of abnormalities is covered.

ELECTROCARDIOGRAPHY

A full-time, five-day course, Monday through Saturday (excluding Wednesday and Saturday afternoons) March 14-19, 1960.

This course is the result of twenty years' experience in the teaching of electrocardiography and approaches the problem from the fundamental concept of the electrophysiology of the normal heart and the changes resulting from cardiac pathology. Much audio-visual and electronic equipment is used for demonstration. The stress is entirely on learning basic mechanisms and not pattern recall. While this course is suitable for physicians without previous electrocardiographic training, it has been found from experience that physicians with considerable electrocardiographic experience likewise derive benefit.

Both courses are under the direction of Dr. J. Scott Butterworth.

For application and information write the Office of the Associate Dean, New York University Postgraduate Medical School, 550 First Avenue, New York 16, N. Y.

NEW MEMBERS

The JOURNAL *takes this opportunity to welcome these new members into the Kansas Medical Society.*

Charles G. Stanley, M.D.
3105 Jefferson Street
Kansas City 11, Kansas

William H. Zimmerman, M.D.*
527 Mills Building
Topeka, Kansas

* Dr. Zimmerman was listed as practicing at Topeka State Hospital. This was an error and his actual address is given above.

Blue Shield

1959 Closes With New High Membership

In a year-end statement issued by Blue Cross-Blue Shield recently, three important achievements were revealed:

- membership in both Blue Cross and Blue Shield continues to increase,
- cancellation is lower than ever before, and
- operating costs for the Plans continue to decrease.

Membership Up

Membership in Kansas Blue Cross-Blue Shield continues to increase each year. For example, from October, 1958 to October, 1959, there has been an increase of 12,940 in Blue Cross and 19,875 in Blue Shield. Total membership at the end of October was 591,973 in Blue Cross and 527,450 in Blue Shield.

At the same time that new members continue to enroll in Blue Cross-Blue Shield, statistics reveal that the year ending October 31, was also one of the organization's lowest in cancellation.

Operating Cost Down

During the same period, as the volume of business grew, operating costs continued on the downward trend. The cost per member to administer Blue Cross-Blue Shield has remained fairly constant for several years. For example, during the year 1958, operating costs were approximately 9 per cent, and this past year they have been reduced even further to 7.7 per cent. In other words—just a little less than eight cents of the member's dues dollar is used to operate the Plans.

While membership grows and operating costs decrease, the report went on to say, the cost of hospital-medical-surgical care has continued to increase in keeping with the inflationary pace in other areas, such as in the cost of food, housing, taxes, etc., and at the same time, an increasing number of members are using more of this valuable, but expensive care every year.

Care Cost Higher

As a result of this higher cost of care and the greater use of that care it was necessary to adjust Blue Cross-Blue Shield dues beginning early this year. (Details of this increase were announced in the JOURNAL in December.)

It is possible that adjustments in Blue Cross-Blue Shield dues raise the question "What is the most economical way to budget for hospital-medical-surgical care?" It is obvious that Kansans think Blue Cross-Blue Shield is the answer to that question, as they continue to enroll in the largest organization offering hospital-medical-surgical benefits in Kansas and while at the same time, cancellation figures continue to decrease. Today, Kansas Blue Cross-Blue Shield has almost as many members as the combined enrollment of all other companies selling health care protection in Kansas.

New Virus Causes Croup

Association of influenza viruses with respiratory tract infections and croupy cough in infants has been documented by a number of investigators. Now a report links infantile croup with the new myxovirus, hemadsorption virus Type 2, which shows a predilection for male children. This finding is "in accord with earlier notations that croup occurs less frequently in females," reports Dr. Russell J. Blattner. If substantiated as one of the major causes of infectious croup, hemadsorption virus Type 2 will be "a leading candidate for inclusion in any vaccine against respiratory tract viruses."—*Journal of Pediatrics,* December, 1959.

KMS Obituaries

JAMES GRANT LEE, M.D.

Dr. James Grant Lee, 91, a general practitioner in Bonner Springs since 1907, died December 20, at Bethany Hospital.

He suffered a cerebral hemorrhage at his home. Doctor Lee was the father of Dr. J. G. Lee, Jr., an obstetrician and gynecologist.

Born in Davies County, Missouri, July 29, 1868, he graduated from the old Kansas City Medical College in March, 1892. Later that school was affiliated with the University of Kansas School of Medicine.

He began the practice of medicine in DeSoto in 1892, moving to Bonner Springs in 1907. From 1912 to 1918 he also practiced at Eudora and DeSoto. Doctor Lee estimated that he delivered about 3,500 babies during his medical career.

He was a member of the staffs of the University of Kansas Medical Center and Bethany Hospital.

Doctor Lee was a member of the Bonner Springs Methodist Church, the Wyandotte County Medical Society and the Bonner Springs Masonic Lodge, having been a Mason 66 years.

Among his survivors are his wife, Mrs. Mae M. Lee, of the home; two daughters and three grandchildren.

R. L. STROBACH, M.D.

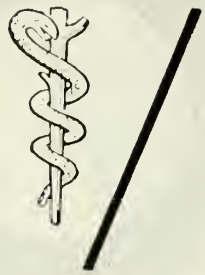
Dr. Rolla L. Strobach, 49, Kansas City, died at Bethany Hospital after a 6-months illness. He was stricken at the home and taken to Bethany.

Doctor Strobach was with the U. S. Public Health Service in World War II. He later was an assistant and acting director of the city-county health department in Wyandotte County. Doctor Strobach was affiliated with Providence, Bethany, and St. Margaret's hospital staffs.

He was born in St. Louis and received A.B. and M.D. degrees from Washington University, interning at St. John's Hospital there. He did his postgraduate work at the Vanderbilt University, Nashville, Tenn. He established his practice 13 years ago at Eighteenth Street and Quindaro Boulevard and later moved it to 5417 Leavenworth Road.

Doctor Strobach was a member of Christ the King Catholic Church, the Welborn Optimist Club, and the Phi Beta Pi Medical Fraternity.

Surviving are his wife, Mrs. Jeanne Strobach, a daughter and two sons.



The Kansas Press Looks at Medicine

Editor's Note. In this section the JOURNAL *reproduces editorials relating to medicine which have appeared in the lay press. An effort is made to include both favorable and unfavorable comments, and the Editorial Board in no instance assumes responsibility for the opinions expressed.*

Doctors and Charity Patients

Medical doctors seeking to fend off more "medicine by government" are reminding the public again of how much charity work they do.

The *AMA News*, newspaper of the American Medical Association, states editorially: "An all-out nationalized medical care program would mean that the taxpayers would have to pick up the bill for all free medical care now being provided by the practicing physicians of America."

The newspaper says that surveys show that the average Louisiana physician gives $3,531 a year in free medical care. In South Dakota, the average is $2,364. In some large California counties the average may run as high as $6,000.

It has always been assumed in medicine that every doctor had to carry his share of charity patients—persons from whom he was certain never to receive full payment. *Medical Economics* magazine surveys show that doctors devote at least 10 per cent of their working hours to direct charity services, and another 10 per cent to non-charity patients who'll never pay their bills.

Advocates of more "medicine by government" counter these claims by pointing out that the dignity of the patient is involved. Many forced to be on charity are unhappy at not being able to pay, and their debt may weigh on their minds even if the doctor has written it off. Presumably such persons would not mind charity from government.

The question of medical care for the aged and for other segments of the population unable to afford it will arise increasingly in coming years. The doctors do well to remind us of the burden they have carried in this respect in the past—a load which would be shifted to the taxpayer otherwise.—*Wichita Eagle,* December 12, 1959.

Medical Costs Rising

Many American families are having to adjust to rising health bills and medical costs have been one of the steady pressures causing the cost of living index to creep higher.

How much of that is due to:

Higher fees and drug and hospital charges?

To people seeking more medical attention than they used to?

To new, more effective, but costlier drugs and treatments?

Figures supplied by the Social Security Administration and analyzed by the Chase Manhattan Bank of New York put the nation's annual bill for personal medical care at about 22 billion dollars, double what it was in 1950, and 6½ times what it was in 1929.

But the big jump as every family knows has been how much more individuals spend for medical care than they did 30 years ago. In 1929 medical expenditures came to $27 per person. Today they are $124.

These are average figures. Plenty of people have to spend many times that in the course of a year. And a few lucky ones escape with less or none.

The bank economists note that medical care costs have risen sharply. But they stress that new treatments and practices make comparisons difficult.

"The charge for a day's stay in the hospital has gone up 73 per cent since 1950, but modern methods of medical treatment have reduced the average length of stay by over one eighth. More important much of the care which is saving lives and improving health today had no counterpart 10, let alone 30, years ago," they say.

Two other factors enter into the rising total of costs.

One is that research has enabled doctors to treat a wider range of illness. And more people take ad-

vantage of this. It is estimated that today about two thirds of the population see a doctor during the year. Thirty years ago less than half did. And the number of visits per patient has risen 40 per cent.

The second factor is that increasing visits have been spurred by rising incomes and by the spread of health insurance now held by three families out of four.—*Hardtner Press,* December 17, 1959.

Major Heart Damage

Though heart diseases in general may be on the advance among our senior citizens, rheumatic fever, a major cause of heart damage in youngsters, is making a steady retreat.

The reduction in both incidence and death rate from rheumatic fever is one of several findings on the disease presented in the current issue of *Patterns of Disease,* a Parke, Davis & Company publication for the medical profession.

Whereas in 1910, rheumatic fever claimed the lives of seven out of every 100,000 persons, the 1957 mortality rate was only one in every 200,000.

The reasons for this decline are not any one single factor but rather the general over-all advance of medical and health care—more accurate diagnosis, improved control of infectious diseases, better child care, as well as use of antibiotics and other agents.

Despite this encouraging downgrade, however, rheumatic fever is still a major and potentially dangerous problem. In sheer numbers alone, the toll is heavy. An estimated 2,000,000 persons in the United States have had or will develop during their life span an attack of rheumatic fecer. Probably half of these will have residual heart damage as a result of the disease.

Moreover, children are the chief victims of this frequently disabling disease. More than 50 per cent of all initial attacks occur before the age of 15, the five to 12 age group being the most vulnerable of all. Rheumatic fever and resultant heart disease is the fifth leading cause of death among children of five to 14. About one in every 100 school-age children has had rheumatic fever.

What causes the illness? Streptococcal infections play a major role in the onset of rheumatic fever. In one study of 563 servicemen with the disease, no less than 62 per cent were found to have had acute tonsillitis prior to the attack. Another five per cent had had scarlet fever.

Too, the disease seems to run in families. If one child has rheumatic fever the probability of his siblings developing the disease is one in four; if one parent also has the disease, probabilily may increase to one in two.

A major difficulty of rheumatic fever is the fact that it is hard to diagnose. "There is no single specific test for the disease," *Patterns* states, although a combination of certain criteria do point the way to the presence of rheumatic fever in a patient. Once the diagnosis has been established, treatment is relatively simple—"the use of antimicrobial agents against streptococci, of aspirin or adrenocortical steroids to suppress rheumatic inflammatory process in the heart, and bed rest to allow heart inflammation to subside."

In treating rheumatic fever it is cautioned against stopping the use of medicines too soon. "When hormones or salicylate therapy for acute rheumatic fever is discontinued, manifestations of rheumatic activity often reappear," the publication warns.

Probably the greatest danger of rheumatic fever is that of recurrence. Since each additional attack may increase cardiac damage, prevention of recurrence is a paramount problem.

While the recurrence rate has declined noticeably over the past few decades, the chances of another attack within a year are still high: about one in seven for children in the six to 13 age group. However, the risk decreases with time. In one study the recurrence rate among patients more recently recovered from the disease was seven times that for patients free from the disease for longer intervals.

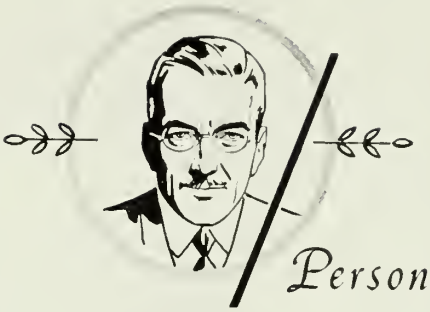
How can the recurrence of rheumatic fever be prevented? By the prevention of streptococcal infections which are "especially dangerous for persons who have had rheumatic fever." And because streptococcal infections are often difficult to detect, the book advises a monthly injection of penicillin as the most effective long-term precautionary measure.

Contrary to popular belief, the person who has had rheumatic fever is not condemned to a life of semi-invalidism. In fact, the great majority of patients with rheumatic fever are capable of leading completely normal lives, once the disease is no longer evident. Overprotection can do more damage to a patient than a return, as soon as possible, to normal activity.

Rheumatic heart disease need not prove a barrier to employment. In general, employees with this and other cardiovascular ailments, "maintain their usual occupations, though the company may enforce avoidance of overtime work and weight lifting."

Thumb-Sucking

Most orthodontists no longer consider the habit of thumb-sucking as seriously as they did in former years, particularly if the habit is discontinued by age 6 or 7 years. "If the thumb-sucking is superimposed as a temporary feature on a dentition which is developing normally, the tongue will reposition the teeth when the habit ceases," writes Dr. I. Phillips Frohman.—*Current Medical Digest.* November, 1959.



Personalities—IN KANSAS MEDICINE

Dr. Robert B. Young has announced that he will be joining Dr. Barbara Russell in the practice of medicine in Rolla, Missouri.

Dr. Young has been with the Hertzler Clinic as "town doctor" for the past three years.

Drs. John Cavanaugh and **H. L. Harris** left Topeka for a flying trip to Europe, landing in Paris on Christmas morning. **Dr. Andre Baude** will accompany them in the flight over. They returned during the first part of January.

Dr. John K. Griffith, who has been practicing in Valley Falls for six years, will open an office in Winfield. He will occupy the suite in the State Bank Building formerly occupied by **Dr. C. D. Behrhorst.** He will carry on a general practice.

Doctor Griffith was reared at Hiawatha, received his bachelor's and medical degrees from the University of Kansas. After receiving his M.D. in 1950 he interned at the K. U. Medical Center, then was in residence at an Independence, Mo. hospital. He was in service six years with the infantry and inspector general's department.

While at Valley Falls, Doctor Griffith has been affiliated with St. Francis and Stormont-Vail hospitals in Topeka, the Atchison county hospital at Atchison, and Jefferson county hospital at Winchester.

Dr. Kenneth May, Bonner Springs, was elected "Chief of Staff" of St. Margaret's Hospital. The event was a dinner attended by the physicians of the hospital and the installation was made by the Right Reverend Edward J. Hunkeler, Bishop of the Kansas Diocese in Kansas.

Doctor May is a native of Waldron, Arkansas, a son of Mr. and Mrs. Clarence May. As a boy, he lived in Kansas City, Missouri and in 1950, he graduated from the School of Medicine of the University of Kansas.

Officers for 1960 were elected by the medical staff of the Community Hospital at the regular monthly meeting at the hospital.

They are **Dr. J. F. Nienstedt,** chairman; **Dr. C. A. Nystrom,** vice chairman; and **Dr. R. A. Dobratz,** secretary.

Holyrood bid adieu to **Dr. C. E. Thompson.** After five and one-half years of practice in Holyrood, he closed his office in December.

He is moving to Columbia, Missouri, where he has accepted a position as an instructor of surgery and resident physician in surgery at the University of Missouri Medical Center. This appointment is a combination training and teaching position in a young and vigorous new medical center.

The Hertzler Clinic Staff announced the resignation of **Dr. T. L. Foster** as Head of the Neuropsychiatric Department of the Clinic last month.

He will locate in Ponca City, Oklahoma, where he will be with the Kay County Mental Hygiene Clinic on a part time basis and will be associated with Dr. Ed Fair in private practice of neurology and psychiatry. This will enable him to reduce the pressure of his work by setting a pace that is modified to the demands of his health.

The January 5 meeting of the Sedgwick County Medical Society installed as president **Dr. Clyde W. Miller.** Also there were two speakers who gave information on The Kansas Medical Society and the A.M.A. They answered questions about these two organizations.

Dr. Glenn R. Peters of Kansas City who is presi-

dent of The Kansas Medical Society, spoke on "The Kansas Medical Society and What It Does for Its Members."

The second speaker was Mr. Aubrey Gates, Director of Field Services of the American Medical Association.

Dr. E. Raymond Gelvin of the Gelvin-Haughey Clinic, was speaker at a meeting of the Lions Club and gave a review of medicine and surgery as he has seen it in the 33 years he has practiced in Concordia. The doctor referred to the Concordia clinic as "the family doctor with thirteen faces."

Doctor Gelvin said his first day in Concordia was far different from today. He related that when he came here nearly all of the surrounding towns had their own doctors, but today very few have a doctor and patients from other towns come to Concordia for medical services. Surgery 33 years ago was not as complex as it is today, he pointed out, when many more instruments and well-trained personnel are available; operating rooms, as well as other rooms at the hospital, are kept sterilized and germ free. He told how in bygone years doctors received their training by working with older doctors.

Drs. Karl Menninger and **Joseph Satten,** Topeka, attended a joint session of the American Association for the Advancement of Science and the American Society of Criminology held in Chicago in December. They presented a paper entitled *Problems in the Development of Psychiatric Criminology.*

Dr. Bernard H. Hall, Topeka, has been appointed director of the Adult Outpatient Service of the Menninger Clinic. He succeeds **Dr. Prescott W. Thompson** who will devote a major portion of his time to the development of clinical and research programs in geriatrics.

Dr. Glenn R. Peters informally addressed the Golden Belt Medical Society at their January meeting held at the Holiday Inn Motel in Salina. The Saline County Medical Society was host to the Golden Belt Society which was organized in 1889. **Dr. McComas, Jr.** is president of the society. Their program for the month consisted of a speech given by **Dr. John A. Segerson,** Topeka, on "Abnormal Involuntary Movements" and a talk by Marvin E. Larson, director, Social Welfare Department of Kansas, from Topeka.

New Trend for Professional Men

Professional men will turn increasingly during the '60s to new forms of life insurance programming which allow them to offset the effects of inflation with the flexible values of investment securities.

That prediction comes from Chicago investment counselor Michael D. Marcus, and is based on surveys of professional men made during 1959 by his firm.

"We have found that professional men rank high among those individuals who have decided, in effect, that they can handle their savings dollars better than can an insurance company," he reports.

"Rather than letting their surplus funds accumulate as insurance cash values," he says, "they are more likely to be attracted by the low premiums of term insurance.

"An even better solution for these men," Marcus suggests, "would be to buy financed insurance, thus freeing for investment the entire amount their insurance premiums would have cost."

Marcus' firm has pioneered a combination of life insurance programming with investment counseling in a package gaining wide acceptance among professional men throughout the Midwest and in other areas where similar plans are being developed.

He views this as an extension of the trend which in recent years has caused:

- Growing interest in the variable annuity;
- Increasing activity by individual insurance salesmen offering clients investment securities as well as life insurance policies;
- And mutual funds which also offer life insurance.

Marcus' own service aims to provide the specific, individual solutions to given financial situations, evaluating each man's insurance needs and his investment aims. Then he balances the insurance premiums, advanced by bank or the issuing insurance company, with a regular investment program which at any given time will replace a like amount of life insurance.

His program has "unique advantages" for professional men, Marcus believes.

"It insures regularity of securities purchases, giving him the security of steady increases in his holdings and the long-range benefit of dollar cost averaging.

"It allows for the proper programming of life insurance as his status changes since ordinary life policies may be converted with flexibility which term insurance cannot achieve.

"And, most important for the busy professional man," Marcus believes, "it provides constant attention to the day-to-day economic changes which affect the individual's program and which merit professional management."

OUTLINE OF HISTOLOGY, Fourth Edition, by Margaret M. Hoskins, Ph.D. and Gerrit Bevelander, Ph.D. 323 pp. $4.75. The C. V. Mosby Co., St. Louis, 1959.

The fourth edition is now in two parts: The first relates the finer structure of the human body other than the dental tissues; the second part describes in detail the newer approach to the structure of the teeth and related structures. The book is produced in offset printing with excellent effects in the illustrations which are well executed line drawings. There are two colored plates on blood and blood formation. Diagrams aid the reader in orienting histological detail; for example, the liver is presented in a three dimensional drawing, giving a clearer picture especially of the blood supply. Other glandular tissues are also diagrammed for the readers' understanding of parts. This is especially true of the lymph glands. This is an inexpensively produced book, yet maintaining excellence, accuracy and clarity of material discussed. A brief and accurate account of the microscopic structures follow in the usual pattern of presentation found in most texts.

For the practicing physician who wishes to review or study the finer details of the human body, this book will be quite satisfying.—*P.G.R.*

BIOPSY MANUAL. By James D. Hardy, M.D., James G. Griffin, Jr., M.D., and Jorge A. Rodriguez, M.D. 150 pp. Price $6.50. W. B. Saunders Co., Philadelphia, 1959.

Although "Biopsy Manual" is a small text of 150 pages, it is certainly gigantic in its informational content. This manual should be readily available in the surgical section of all hospitals.

The book contains nuggets of information of value to all surgeons recently or formerly trained. In addition to the surgeons, the technicians, nurses, and even the pathologist could all learn from it.

"Biopsy Manual" tells how, where and why biopsies should be done. It explains the precautions to be taken, the errors one might make and the possible complications one might encounter in taking biopsies in the many parts of the body.

The illustrations are clearly explanatory and are numerous. The bibliography lists 88 publications which have been used as reference in the compilation of the manual.

The authors are from the University of Mississippi Medical School. They should be commended for this guide to better biopsies.—*L.L.S.*

LIVING BEYOND YOUR HEART ATTACK—By Eugene G. Mozes, M.D. 212 pp. Price $3.50, 1959. Prentice-Hall, Inc., Englewood Cliffs, N. J.

Many physicians feel the need for a reliable source for answers to patients' questions about their illness. It is usually easier to treat a well informed patient, and such a patient will cooperate more readily. However, the busy practitioner may not have time for detailed explanations. The patient may not remember all that he is told.

In this situation, a sensible, accurate book on the subject of a particular disease is helpful. This book attempts to fill this need so far as coronary artery diseases is concerned. It generally does it pretty well. The language is directed at laymen, and some of the rather glib explanations may make the physician cringe. The well-informed layman conversely might not appreciate a rather patronizing manner of presentation that is occasionally found. Nonetheless, there is little to quibble with in this exposition of our present understanding of a complex field with many factors not yet agreed upon within the profession.

The author (described on the jacket as a leading heart specialist from Canton, Ohio) attempts vigorously to strike a cheerful and reassuring note, and occasionally has to beat around the bush to avoid some less pleasant facts. He dutifully reminds the reader

repeatedly that he should be guided by his personal physician in his particular circumstances, and tries to enlighten him as to the various procedures in diagnosis and treatment he may encounter. The practitioner, however, may find himself trying to explain why he did not do this or that as recommended by Doctor Mozes. On the whole, this volume seems to fill a real need and many physicians might like to give their patients a copy to read or keep the title in mind as a suggestion. Certainly, one couldn't just drop it on the victim's bed two or three days after his attack and tell him to "do it yourself." The astute physician will recognize those patients who might benefit from this book. The others are very apt, for good or for bad, to find it for themselves anyway. —*J.E.S.*

BOOKS RECEIVED

THE PREPARATION OF MEDICAL LITERATURE, Louise Montgomery Cross, J. B. Lippincott Co., Philadelphia, 1959, Price $10.00, 451 pages, Illustrated.

MEDIEVAL AND RENAISSANCE MEDICINE. Benjamin L. Gordon, M.D., Philosophical Library, Inc., New York, 1959, Price $10.00, 843 pages, Illustrated.

THE STORY OF DISSECTION, Jack Kevorkian, Philosophical Library, Inc., New York, 1959, Price $3.75, 80 pages, Illustrated.

ALCOHOL EDUCATION FOR THE LAYMAN, Margaret E. Monroe & Jean Stewart, Rutgers University Press, 1959, Price $5.00, 166 pages.

HANDBOOK OF POISONING: DIAGNOSIS AND TREATMENT, 2nd Edition, Robert H. Dreisbach, M.D., Lange Medical Publications, Los Altos, California, 1959, Price $3.50, 475 pages.

FROM MAGIC TO SCIENCE, Charles Singer, Dover Publications, New York, 1959, Price $2.00, 253 pages, Illustrated.

DE MAGNETE, William Gilbert, Dover Publications, New York, 1959, Price $2.00, 386 pages, Illustrated.

CLINICAL AUSCULATION OF THE HEART, Samuel A. Levine, M.D., W. B. Saunders Co., Philadelphia, 1959, Price $11.00, 675 pages, 660 Illustrations.

SOIL, GRASS, AND CANCER, André Voisin, Philosophical Library, Inc., 1959, Price $15.00, 302 pages, Illustrated. Translated from French.

YOU CAN NOW BREAK THE CIGARETTE HABIT, Arthur King, Doubleday & Co., Garden City, N. Y., 1959, Price $2.00, 96 pages.

THE TEEN-AGE YEARS, Arthur Roth, M.D., Doubleday & Co., Garden City, N. Y., 1959, Price $3.95, 288 pages.

Pregnancy Test

A new method for the detection of pregnancy, using an electroplating process rather than test animals, apparently is of value not only in determining pregnancy, but also in following the course of gestation, two Ohio investigators report.

Dr. Walter H. Hartung, Jr., and Herbert J. DeVauent, E.E., of the Departments of Pathology and Bioelectrics, St. Charles Hospital, Toledo, said that the test yielded an 84.0 per cent accuracy among 125 women in the first three months of pregnancy, including those with complications. In 29 pregnant women in whom there were no complications, 100 per cent accuracy was found.

Parallel frog, rabbit and electroplating tests were carried out in 70 women. "Of these, 44 were pregnant clinically, yielding a 43.2 per cent accuracy with the frog test, 84.1 per cent with the rabbit test and 91.0 per cent with the electroplating test. Of the 70 women, 26 were not pregnant clinically, yielding a 98.2 per cent accuracy with the frog and rabbit tests and a 61.5 per cent accuracy with the electroplating test."

Doubtful results in most cases can be resolved by repeat studies in a few hours or days. "In an obviously pregnant woman or in one proved to be pregnant by a test animal, however, a doubtful reading may represent pregnancy earlier than 6 weeks or a disturbed pregnancy. In several such cases . . . the woman was threatening to abort or aborted within 24 to 48 hours."

This finding suggests that the test may be valuable "in following the course of gestation after the diagnosis has been established."

The test is done on a freshly voided random sample of urine, which is brought to room temperature, adjusted to a pH of 4.0, and charged for 5 seconds with 12 volts direct current electricity applied through silver and copper electrodes, the investigators explained. The urine of pregnant women causes a black substance to be deposited on the anode.

Although at present biological tests for the detection of pregnancy are universally used, "Surveys of present methods for detecting pregnancy suggests that a rapid, economical, sensitive and specific test for pregnancy without the use of animals is quite desirable," the authors said. Their preliminary studies indicate that the electroplating test "may be a valuable tool . . . for detecting pregnancy."

Food Supplement for Children

Growth disturbances in adolescent and preadolescent children ingesting inadequate and unbalanced diets may be corrected by supplementing the daily food intake with nonfat dry milk, report Dr. Tom D. Spies and associates of Northwestern University, Chicago (*Journal of Diseases of Children* 98:187, 1959). Both skeletal and somantic growth were accelerated in 10 children 4 to 12½ years of age given 6 oz. of milk six days a week for six months. Children aged 15 to 16 years increased rate of body growth; rate of skeletal maturation was unchanged.—*Modern Medicine*, Nov. 15, 1959.

The Kansas Medical Society—1959-1960

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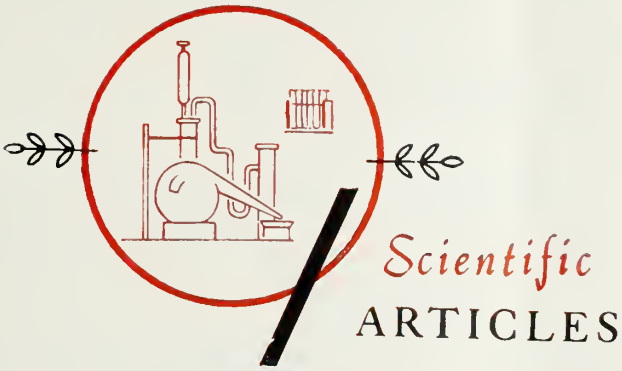
Woodson	A. C. Dingus, Yates Center	H. A. West, Yates Center
Wyandotte	M. R. Fitzpatrick, Kansas City	Wray Enders, Kansas City



1959 and Forward

A Report from the Dean of the University of Kansas Medical Center

It is a privilege once more to write a prefatory statement for the University of Kansas Medical Center issue of the Journal of the Kansas Medical Society. The report of the past year and of the present one continues to be one of growth and progress. The salient features of that story follow.

Personnel. From the standpoint of faculty changes, there were several that bear mention here.

On *June 30, 1959, Dr. Leroy A. Calkins* reached the point of statutory retirement from his position as chairman of the Department of Gynecology and Obstetrics. Dr. Calkins had been chairman of the department since 1929 and in that position had the longest tenure of any departmental chairman in the School of Medicine. The growth of the department over the period of 30 years was entirely a credit to Dr. Calkins.

His retirement as chairman, of course, does not mean his retirement from the active faculty of the School of Medicine. He will continue as professor of Gynecology and Obstetrics as a teacher, investigator, and clinician.

On *July 1, 1959*, the chairmanship of the Department of Gynecology and Obstetrics was assumed by *Dr. Kermit Krantz.* Dr. Krantz came to the school from the University of Arkansas School of Medicine where he had been an assistant professor of Gynecology and Obstetrics since 1955. He is a graduate of Northwestern University School of Medicine. His graduate training in obstetrics and gynecology was obtained at Cornell University and the University of Vermont. Dr. Krantz, whom many of you have already met through your local societies and through his appearance on our circuit courses, brings to the department dynamic leadership.

On *September 1, 1959, Dr. Robert E. Stowell* resigned as chairman of the Department of Pathology and Oncology to take over the position of scientific director of the Armed Forces Institute of Pathology. Dr. Stowell had been a member of the faculty of the School of Medicine since 1948. Under his leadership, the Department of Pathology had experienced tremendous growth. The volume of research carried on in the department was a credit to the Medical Center; the distinguished faculty that he brought to this Medical School was a source of great pride to all of us. Several of his young men have gone on to become chairman of departments in other schools of medicine. Dr. Stowell's leaving, although regretted deeply, is also a source of pride to the Medical Center in that the position he has now accepted is looked upon as the most prominent position in pathology in this country, if not in the world.

On *November 1, 1959, Dr. Vernon E. Wilson's* resignation as associate dean of the School of Medicine became effective. On that date Dr. Wilson assumed his new responsibilities as dean of the University of Missouri School of Medicine and director of the University of Missouri Medical Center. Dr. Wilson had been a member of this faculty since 1953 and associate dean of the medical school since 1957. I believe there are few of you who have not come to know Vernon intimately. All of you must know how deeply we will miss him. The fact that he has gone to greater responsibility once more makes us prideful.

On *November 15, 1959, Dr. E. Grey Dimond,* chairman of our Department of Internal Medicine since 1952, announced his resignation, effective June 30 of this year. At that time Dr. Dimond will move his research and teaching activities to the Scripps Research Foundation in La Jolla, California. Little that can be said here would add to the knowledge that you already have of Dr. Dimond's dynamic leadership of the Department of Medicine, of his crucial role in the postgraduate activities of that department and particularly his own area of cardiology. His presence will be missed by all of us.

On *December 1, 1959, Dr. Robert P. Hudson* assumed his duties as assistant dean of the School of Medicine in charge of student affairs. Dr. Hudson is a graduate of this School of Medicine with the class of 1952. He has been a member of this faculty since 1958. Dr. Hudson's attributes are very much like those of Dr. Wilson, and we look forward to his continued growth in this position. We hope that all of you will soon become well acquainted with him.

On *January 1, 1960, Dr. John R. Carter* joined the faculty of the School of Medicine as chairman of the Department of Pathology and Oncology. Dr. Carter comes to us from the School of Medicine of the State University of Iowa where he had been a member of the faculty for 11 years. Dr. Carter is a graduate of the University of Rochester School of Medicine. His graduate training in pathology was received at the State University of Iowa. Dr. Carter has been a key member of the faculty at Iowa for a considerable number of years. We look forward with pleasant anticipation to his efforts here with us.

A committee of the faculty is now actively at work seeking a successor to Dr. Dimond. As soon as a successor has been found, a suitable announcement will be made to the Kansas Medical Society.

Facilities. Since a report was last given to you in these pages, the remodeling of several floors in the Hixon Building has come nearly to completion. As many projects go, this one has taken longer than we had anticipated, but we are looking forward to moving into the remodeled areas within the next month or six weeks.

On the corner of 39th and Cambridge, there is now under construction a half million dollar building designed for the use of the Communicable Disease Center of the United States Public Health Service. This building is being constructed by the Kansas University Endowment Association under a lease agreement with the General Services Administration of the Federal Government. When it is completed, the quonset-type building presently housing the C.D.C. Laboratories, under the direction of Dr. Furcolow, will be vacated.

Architectural plans are now nearly complete for the construction of an addition to Wahl Hall which will make possible the ultimate consolidation of the School of Medicine on this campus in Kansas City.

At the 1959 session of the Kansas Legislature, the sum of $1,000,000 was made available to match federal funds, making this building a reality. It is our hope that bids will be taken on this project in March and that construction will be enabled to begin in June.

Budget. This progress report is being written at a time when the Legislature is in session. Up to this moment, the appropriation measure for the Medical Center has passed the Senate and is now before the House for its consideration. I am happy to report that the Legislature has provided the necessary appropriations to meet our entire request for the forthcoming fiscal year.

Conclusion. It is once more a source of great satisfaction for me to report that the relationships between School and Society continue at the very highest level. This year we felt constrained to call upon the Society for assistance in our budgetary problems. Nothing could have pleased us more than the magnificent spirit with which the Society came to our support, immediately, unanimously, and wholeheartedly, and for this understanding support and encouragement, we are extremely grateful.

W. Clarke Wescoe, M.D., Dean

The University of Kansas School of Medicine

Postgraduate Medicine

A Report of the Department of Postgraduate Medical Education

MAHLON DELP, M.D.; JESSE D. RISING, M.D.; *and* WILLIAM D. NELLIGAN, B.S., *Kansas City*

EACH YEAR THE DEPARTMENT of Postgraduate Medical Education prepares, primarily for the administration of the University and the School of Medicine, an annual report. This information has limited circulation, and consequently only a few members of our student body, the physicians of Kansas, have a current view of the department's total activity. Toward this group we have a feeling of real gratitude and responsibility, and to them we direct this report.

Forty-Fifth Year of Continuation of Medical Education

The School of Medicine can feel a justifiable degree of satisfaction in this, its 45th year of continuation education in medicine, and therefore presents this review of the past year's work. Included with the text of this report are charts depicting some of the more important information.

No change in administrative structure or function has been made in the past year. We have leaned more heavily upon the Executive Faculty of the School of Medicine than in the past, presenting to them many of our problems having implications of policy for both their information and advice. We can safely say that this medical school faculty has a better grasp of basic concepts, objectives and methods in this phase of medical education than does any other similar faculty in the country. Our Postgraduate Advisory Committee likewise represents a superbly oriented, responsible and thoughtful group of physicians in Kansas who are extremely helpful in guiding this program in which they have a heavy intellectual investment. We are firmly convinced that ours is a sound administrative structure infinitely more logical in form than the so-called postgraduate schools with their sometimes-functioning faculties and paper organizations. Our school is one solid group engaged in the effort of medical and health education with common objectives and minimum distractions.

Thirty-Nine Courses Offered

The academic year 1958-59 was finished with the program, "What's New in Orthopedics," completing an array of 39 courses not including the circuit sessions at 10 centers and omitting the repetitions of the correspondence courses in electrocardiography and hematology. This represents 11 more courses than were given the previous year. The increased number of offerings is not in itself a real feat or accomplishment. We do, however, wish to comment upon individual programs. The Department of Nursing Education has made remarkable progress this year with a series of new projects including a "Nursing Workshop" at Garden City. Some of this work simulates graduate education, but if our department can be of service in furthering such it should. The success of these exercises in nursing education has been so encouraging as to open up a wide field untouched in our community of responsibility.

A course in temporal bone surgery given by the Department of Otorhinolaryngology to a small group of physicians was an outstanding venture. "The Ophthalmoscope: Its Use in Medicine" employed new teaching methods with gratifying results. Similar remarks can be made of the courses, "Glaucoma" and "What's New in Orthopedics." The latter was an initiatory project and, judging from the spontaneous approval of the small group attending, was an excellent teaching contrivance. "Cardiac Auscultation" was, by request, repeated during the year by the cardiovascular staff. A small group; close personal instruction; and the use of phonocardiograms, sound equipment, electronic stethoscope jacks, recorded tapes, and patients formed the design most certain to teach and train.

Short Courses Increase

Larger enrollment short courses ("symposia") such as those in "Obstetrics," "Internal Medicine," "Pediatrics," and "Surgery" continued popular and drew large numbers of students from all parts of the country. A skillful guest moderator for all sessions of the obstetrics program proved to be one of the most profitable of recent innovations in various teaching techniques. The surgery program, scheduled in May rather than in January, had its greatest enrollment and received its most laudatory responses to questionnaires. A series of short teaching movies pro-

From the Department of Postgraduate Medical Education, University of Kansas School of Medicine.

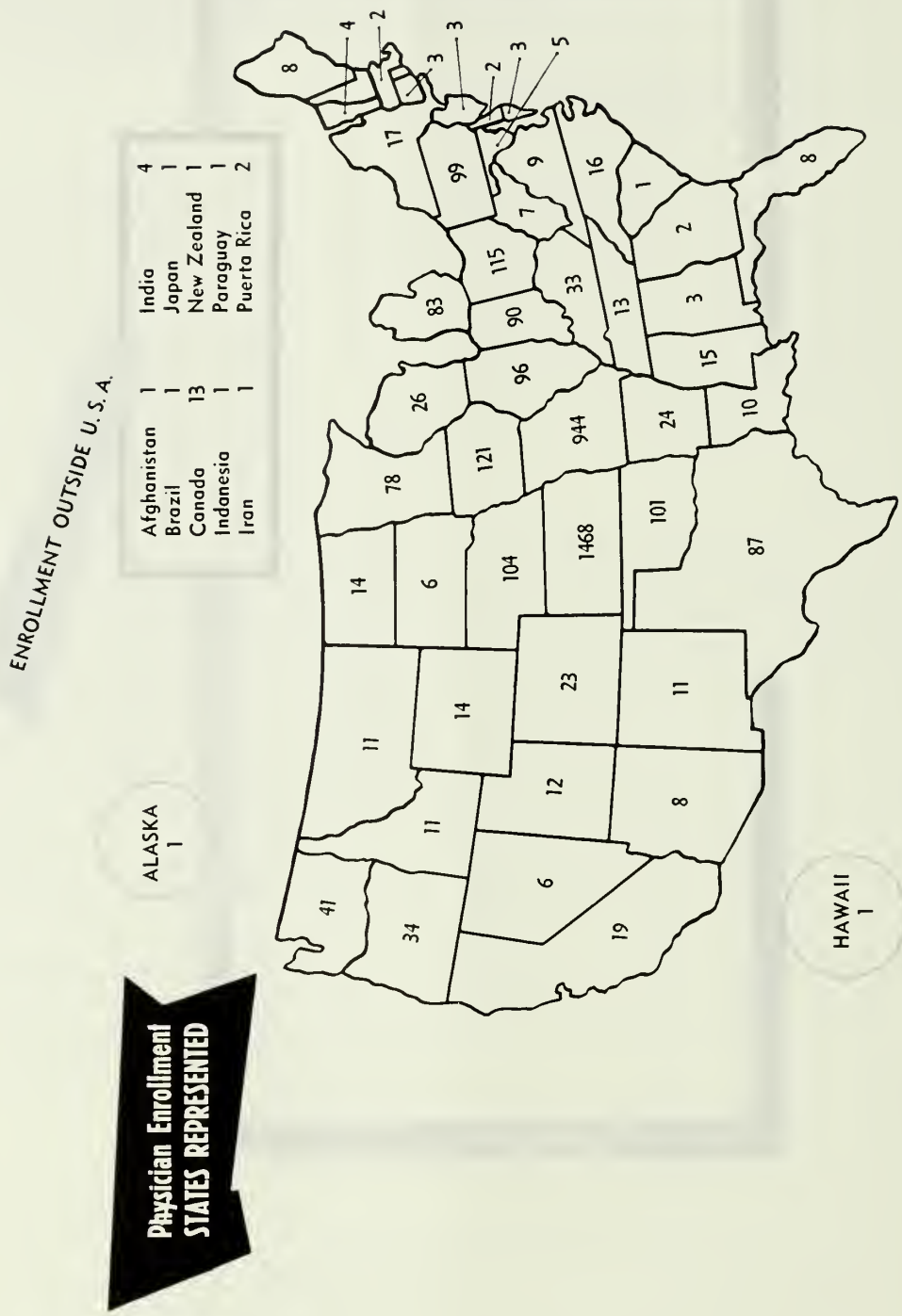

Physician Enrollment
STATES REPRESENTED
ENROLLMENT OUTSIDE U. S. A.
Afghanistan 1
Brazil 1
Canada 13
Indonesia 1
Iran 1
India 4
Japan 1
New Zealand 1
Paraguay 1
Puerta Rica 2
ALASKA
1
HAWAII
1
8
4
2
3
3
2
3
5
17
99
9
16
1
8
7
2
115
33
13
3
83
90
15
26
96
944
24
10
78
121
1468
101
87
14
6
104
23
11
11
14
12
8
11
41
34
6
19

Figure 1

NURSE ENROLLMENT
STATES REPRESENTED
5
9
26
368
13
18
6
20
225
24
1
1
TECHNICIAN ENROLLMENT
STATES REPRESENTED
1
2
1
1
1

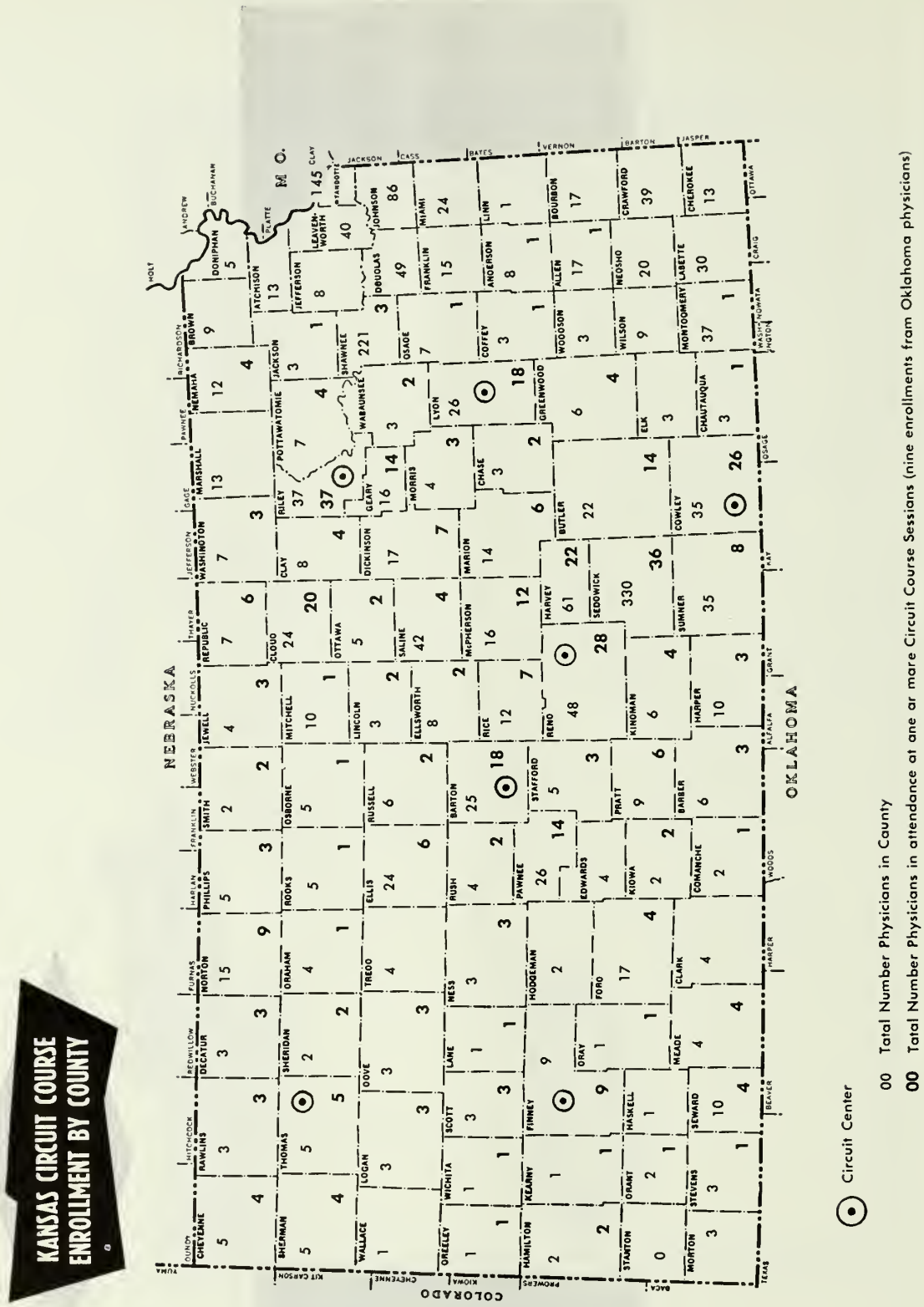

KANSAS CIRCUIT COURSE
ENROLLMENT BY COUNTY
NEBRASKA
COLORADO
OKLAHOMA
M O.
Circuit Center
00 Total Number Physicians in County
00 Total Number Physicians in attendance at one or more Circuit Course Sessions (nine enrollments from Oklahoma physicians)

Figure 3

duced in our own institution were successfully used in this program.

The short courses or "symposia" present some problems as teaching projects. The groups are frequently large and much teaching follows the didactic method; but several comments are pertinent: Criticism of similar methods used in undergraduate medical school teaching are far from appropriate here, and the "symposia" are distinctly superior to the ordinary medical meeting. With ingenuity in teaching plans and methods a large group can be moulded into a participating student body simulating the intimacy usually accomplished more easily with a small group. Our faculty, by experience, is expert in this. The nursing group this year divided groups of 75 and 100 into several small discussion groups, and continued instructions for four or five days in such pattern.

TABLE II

KANSAS CIRCUIT COURSE ENROLLMENT BY CENTER

Circuit Centers	*Physicians in Area*	*Number Attended*	*Percentage Attended*
Manhattan	120	76	63
Hutchinson	170	90	53
Arkansas City	96	56	58
Emporia	53	27	51
Concordia	104	43	41
Colby	52	40	77
Garden City	76	39	51
Great Bend	120	55	46
Total	791	426	53.9

Single Subject Presentations

We are enthusiastic about single-subject presentations such as the program on "Glaucoma." Of course, we reiterate the superiority of the "clinical traineeship" over all other forms of postgraduate education and training; but, if basic principles of postgraduate medical education are kept in view, all methods have value and must be appropriately exploited if we are to attain our broad objectives.

Results of an intensive study of the nature of medical practice, carried on by our own "preceptors" in Kansas, were published under the title of "General Practice in Kansas."[1] The importance we attach to introspective study of our program of continuing medical education is well known. There are few if any real sources of accumulated information in this field, and our program by virtue of age and experience is obligated to record these. Collection and analysis of data will continue indefinitely as a regular departmental function in research.

TABLE I

PHYSICIAN ENROLLMENT FREQUENCY

No. of Physicians	*No. of Courses Attended*	*Total No. of Physician Enrollments*
2192	1	2192
486	2	972
139	3	417
30	4	120
12	5	60
4	6	24
3	7	21
..	8	..
..	9	..
2	10	20
..	11	..
1	12	12
2869		3838

An even larger number of guest faculty was used this year than previously, chiefly because more programs were produced. Other organizations interested in postgraduate medical education do not understand our liberal use of distinguished guest faculty. The answer is simple: by tradition our student body expects it, and heartily endorses the practice; and because of careful selection these teachers enhance, inspire the students, and adorn the instructional atmosphere. We shall continue this custom.

Our own medical faculty members have long accepted their responsibilities for postgraduate teaching and do it in the same manner as they do the teaching of medical students, nurses, technologists, graduate students, internes, and residents. All of the circuit-type teaching is done by our own faculty; a high percentage of the basic science instruction is given by our own group; and virtually all of the small-group instruction in any program is given by our staff. Naturally, the "clinical traineeships" are carried on purely by our own teachers.

Enrollment Figures Tell of Popularity

It is readily admitted that enrollment figures are relatively unimportant, and should in no way be construed as indicating the effectiveness or quality of the program. They can, however, safely be said to indicate the popularity of the program and its convincing promotion. During the 1958-59 school year 3,838 physicians were enrolled. This is an increase of nearly 500 over the preceding year. (We had actually anticipated a decrease in total registration for the year.) It should be understood that 610 of

(Continued on page 121)

Ventilation During Anesthesia

The Problem of Maintaining Adequate Respiration During Anesthesia

JOHN I. DAVIES, M.D., F.R.C.P.(C), ***Kansas City***

THE IMPORTANCE OF ADEQUATE respiration in maintaining consciousness and life was well recognized in antiquity, so it is not surprising that when general anesthetics were first administered over 100 years ago considerable attention was paid to respiratory movements. John Snow described changes in the respiratory pattern during various depths of anesthesia and recorded a number of deaths during anesthesia in which respiratory obstruction and depression were contributory factors.

The Good Old Days

During the 1930's before the widespread popularity of cyclopropane, intravenous barbiturates, and the introduction of muscle relaxants, the usual general anesthetic techniques were either ether, or chloroform/ether mixtures by open drop methods, or "Gas, Oxygen, Ether" by some machine. Some anesthesiologists still refer to this period as "the good old days" and it was then thought that patients did not experience particular difficulties if:

1. A clear airway was maintained.
2. Oxygenation was adequate.
3. Anesthesia was lightened if respiration became seriously depressed.

However, these patients did not do as well as we were led to believe as one often saw post-operatively clinical signs of collapse or shock though it was unusual at that time to take B.P. readings. This state was attributed by anesthesiologists to surgical trauma and to the effects of deep prolonged anesthesia often demanded by the type of surgery; and by surgeons to poor administration of the anesthetic.

At the present time the problems associated with ventilation during anesthesia are receiving considerable attention. The reasons for this great interest include:

1. An increasing awareness of the importance of adequate ventilation.
2. The increasing frequency of thoracotomy and the problems associated with an open pneumothorax.
3. The common use of central respiratory depressant agents including cyclopropane, Fluothane, intravenous barbiturates, and analgesics such as Demerol.
4. The widespread use of muscle relaxants.
5. More operations are being performed on patients suffering from moderate and severe respiratory disorders.

It seems clear that as far as ventilation during anesthesia is concerned, the ideal can be summarized by the words of Claude Bernard "all the vital mechanisms, varied as they are, having only one object, that of preserving constant the conditions of life in the internal environment." This view was re-emphasized by Gordon who said, "we should undoubtedly be safer to think more in terms of maintaining a normal respiratory exchange in the individual patient than of trying to get rid of all possible carbon dioxide."[37]

Finally let us remember a quotation of Rowntree who said, "when our blood becomes as acid as triple distilled water, we will likely die in a coma; when it becomes as alkaline as ordinary tap water, we are likely to die in convulsions."

Ventilation Must Be Adequate

It is generally agreed that ventilation must be adequate:

1. To provide adequate oxygenation.
2. To ensure correct elimination of CO_2.
3. To avoid the deleterious effects of unphysiological respiratory movements and pressures on the cardiovascular system.

We are all familiar with the effects of oxygen lack which were described in detail by Haldane and later emphasized by Courville and many other authors. Clinically hypoxia is rarely a problem as oxygen enriched mixtures will compensate for minor degrees

Dr. Davies is the Assistant Professor of Surgery (Anesthesiology), University of Kansas School of Medicine, Kansas City, Kansas.

of obstruction or decreased tidal volume. Hypoxia may still be a potential danger if,

1. Large areas of the tracheobronchial tree are blocked by secretions.
2. Bronchial constriction occurs.
3. Large areas of lungs are compressed by retractors or packs, as during some thoracotomies.
4. Oxygen uptake is impaired by pulmonary disease.

However, an excess of oxygen given for even short periods may be harmful by causing vasoconstriction of cerebral vessels. This effect is well known in aviation circles, as the Oxygen Paradox[4] and has been utilized by some neurosurgeons in providing a relatively drier operative field.

Elimination of CO_2

The proper elimination of carbon dioxide is a far more difficult problem as complicating factors include:

1. Inadequate minute volume caused by
   a. Centrally respiratory depressant agents.
   b. Partial or complete paralysis of respiratory muscles.
   c. Effects of certain postures and mechanical interference with respiratory movements.

   Brownlee and Allbritten have shown that the actual work of breathing during general anesthesia may be increased many fold by factors which interfere with the movements of the chest wall, lung or diaphragm; by the general anesthesia itself; and by even the lateral position.
2. Ineffective soda-lime.
3. Defective or poorly designed apparatus.
4. An increase in dead space. This may be caused by mechanical means. It was shown by Folkow and Pappenheimer that the "parallel" or bronchiolar dead space may be increased by 150 per cent of its normal value by intratracheal pressures of 15-20 cm. of water. These pressures cause dilatation of bronchioles which stay dilated even when the pressures return to normal.

   Severinghaus and Stupfel have shown that the anatomical dead space in man is increased about 30 per cent following 0.5 mgm. of atropine subcutaneously.
5. The use of semi-open methods of anesthesia. Elam and co-workers have shown that when this method is used, and inflow rates equal the patient's minute ventilation, the inspired gases contain between 1.2 and 4.2 per cent carbon dioxide, averaging 2.0 per cent.

The physiology of carbon dioxide and pulmonary ventilation is complicated but some points of interest are:

1. The tension of CO_2 in the arterial blood is the main factor in the control of normal respiration. This level is in equilibrium with the alveolar CO_2 concentration and normally equals a partial pressure of about 40 mm. Hg. The alveolar concentration is constant for a person for long periods of time and is about 5.4-5.6 per cent. If this percentage is increased by 0.23 per cent, ventilation is doubled if the respiratory center is active. Similarly reducing the level of CO_2 will lead to apnea.
2. The pCO_2 is mainly responsible in maintaining the pH of the blood at normal levels. If the normal ratio H_2CO_3/HCO_3 of 1/20 is disturbed a respiratory alkalosis or acidosis may occur particularly during anesthesia when the renal function is depressed. These changes would lead to important changes in the electrolyte balance. The Hamburger phenomenon or "Chloride shift" would lead to secondary changes in the intracellular levels of sodium, potassium, calcium, and magnesium.

The changes in blood pH and intracellular potassium are closely inter-related and greatly affect the distribution of intravenously administered barbiturates and muscle relaxants.

Barbiturates

Acidosis or lowering the blood pH tends to move barbiturates from the blood stream to inert tissue spaces, presumably extracellular. Raising the pH has the reverse effect.[9] This may explain why hypoventilated patients who have reacted to final skin suturing may a short time later appear deeply anesthetized.

Muscle Relaxants

Muscle relaxants do not usually have an effect on the central nervous system when given intravenously. However, it has been suggested that under conditions produced by respiratory acidosis, or intracellular potassium depletion, the blood brain barrier may be so altered that muscle relaxants will cross this barrier and produce a central effect.[10, 13] This central effect is characterized by:

1. An initial apparent resistance to the relaxant.
2. Loss of consciousness or prolonged unconsciousness.
3. Medullary depression affecting both the respiratory and cardiovascular systems.
4. Irreversability by neostigmine of competitive muscle relaxants, and may explain some cases of so-called neostigmine resistant curarization.

Cardiovascular System

Blood levels of CO_2 affect the cardiovascular system in a number of ways. Slight increases in CO_2 act as a central stimulant though peripherally a depressant effect (dilatation) occurs. Under these conditions blood pressure is raised, pulse rate is in-

creased, skin capillary blood flow is increased and veins are dilated. With higher concentrations of CO_2 collapse of the cardiovascular system may occur and in these circumstances death is attributed to a direct effect on the heart. Tenney has shown during experiments on dogs during diffusion ventilation that most of the cardiovascular effects of CO_2 retention are caused by a rapid rise in the titer of circulating adrenalin and nor-adrenalin. Burn has shown that an increase in circulating adrenalin is the main trigger for initiating Selye's stress-response reaction.

Electrocardiographically, CO_2 excess depresses the A-V conduction of the heart and complete block occurs at pH 7.0. The S-A node is also depressed and this tends to slow the heart rate and may precipitate arrhythmias.

On the other hand a deficiency of CO_2 causes a fall in blood pressure; cardiac diastole becomes less complete; the venous pressure falls; and the A-V conduction rate rises because of increased S-A nodal activity.

Van Bergen and co-workers have shown that some cases of postoperative and so-called "cyclopropane shock" are caused by the rapid postoperative lowering of CO_2 when patients breathe room air.

Cerebration

It was shown by Hickman in 1778 that CO_2 could be a narcotic. If conscious patients breathe concentrations of CO_2 as low as five per cent consciousness may be lost and 10 per cent is the upper limit of tolerance if consciousness is to be retained, and anesthesia of a sort occurs with 25-30 per cent CO_2. At 30 per cent convulsions occur and this has been utilized by some psychiatrists as an alternative to electro-convulsive therapy.[18] On the other hand Barach reported that cerebral efficiency decreases when the alveolar CO_2 is lowered 10 mm. Hg. below normal and that giddyness, disorientation and tetanic convulsions occur if the level falls below 23 mm. Hg.

Bohr Effect

The pCO_2 affects oxygen uptake and utilization by shifting the oxygen dissociation curve. Carryer as well as others believes that tissue hypoxia may result when the blood becomes sufficiently alkaline from hyperventilation.

Denstedt and McKearns have shown that either excess or lack of CO_2 may interfere with the transport of oxygen and also depress intracellular enzymatic activity, particularly those concerned with A T P. These effects may be secondary to changes in pH.

Miller and Brown and later Seevers have shown that animals can compensate fairly well to gradual changes in CO_2 concentration but that sudden changes produce the majority of the ill effects described.

As complicated as these effects may seem, during hypothermia, with the added possibility of metabolic tissue acidosis, the position is far more confusing, but of even greater importance.

Rappaport is among the few who currently believe that a primary visceral function of the lung exists as well as a purely physical function. This may explain in part the ability of Swann to resuscitate anoxic dogs with concentrations of oxygen as low as two per cent.

Ventilatory movements and alternative positive and negative intrathoracic pressure affects the cardiovascular system by aiding venous return to the heart. It is thought that these pressures can, by themselves, produce some coronary and pulmonary blood flow, even in the absence of an effective heart beat. Similarly increasing the mean intrathoracic pressure will, by impeding venous return, cause a lowering of cardiac output and fall in blood pressure.

Monitoring of Ventilation

It is thus apparent that it is the concern of every anesthesiologist to ensure that ventilation is adequate. In the investigation of these problems some aids include:

1. Oximeters
2. Estimation of blood pH, pO_2, and pCO_2
3. CO_2 analyzers such as
   a. The mass spectrograph
   b. Liston-Becker infra-red analyzer
   c. Draeger CO_2 analyzer (infra-red)
   d. Liquid color-change indicators (B.O.C., Ohio Chemical)
   e. Dewey & Almy quick acting chemical analyzer

Most are costly and not clinically practical. There is an undoubted need for a cheap reliable, efficient and rapid CO_2 analyzer. That of Dewey and Almy promises to fulfill these conditions—if $200.00 can be considered cheap.

4. Spirometers. In 1922 McKesson emphasized the need of measuring tidal and minute volume. Since then spirometry during anesthesia has been measured by various people including:
   a. Benson using a bellows type spirometer
   b. Lilley using a pneumotachygraph measuring the pressure differential across a Monel metal screen placed in the airway
   c. Moloney introduced a Venturi system measuring the pressure differential produced by a flow of gas in either direction
   d. Wright and Bennett introduced an anemometer of wind vane type to measure volumes directly which is suitable for inclusions in anesthetic circuits

TABLE I

(Modified from Fairley)
Canad. Anaes. Soc. J. 6:3, 225

	Primarily for OR	*Primarily for RT*	*Volume Constant*	*Pressure Constant*	*Gas Motive Force*	*Electric Motive Force*	*Circuit Type a*	*Circuit Type b*	*Circuit Type c*	*Patient-Triggered*	*Automatic*	*Switches Spontaneously*	*Negative Phase*	*Phase Variability*	*Automatic Bag Refill*	*Can Deliver Room Air*	*Alternative Bag*	*Alternative Concertina*	*Humidifier*	*Humidifier With Thermostat*	*Ve Easily Monitored*	*Warning Devices*		*CSA Approved*	*Built-in Manometer*	*Built-in Gas Meter*	*Built-in Suction*
																						Excessive Pressure	*Falling Pressure*				
Beaver		X	VL			X		X		X						X					X			X	X		
Bennett Resuscitator HR-5		X		X	X		X			X	X					X			X		X				X		
Bennett PR-1A		X		X	X		X			X	X	X							X						X		X
Bennett Assistor (BA-2)	X			X	X				X	X	X	X	X	X			X				X				X		
Bird Mark 7		X		X	X		X			X	X	X		X					X						X		
Bird A/C	XX		VL		X				X	X	X	X	X	X	X		X				X				X		
Blease P.3		X	VL			X		X		X	X	X	X	X		X		X			X		X	X	X		X
Blease Pulmoflators	X		VL			X			X		X		X	X		X		X	X		X		X	X	X		X
Emerson A/C	X				X				X	X	X	X	X	X		X	X				X				X		
Engstrom	X	X	VL			X		X			X		X	X		X	X			X	X				X	X	
Jefferson GH3	X		VL		X				X		X		X	X		X	X				X				X		
Jefferson A/C	X		VL		X				X	X	X	X	X	X		X	X				X				X		
Monaghan Ventalung		X		X	X		X			X	X								X						X		
Morch Surgical	X		VL		X				X		X		X	X				X			X				X		
Morch Piston		X	X			X		X			X					X		X	X		X			X			
Radcliff PNP		X		X		X		X			X		X			X				X	X	X	X		X	X	
Radcliff Portable PNP	X	X		X		X		X	X		X		X			X					X	X	X		X		
Radcliff IPP				X		X		X			X					X					X	X	X		X		
Stephenson CR U	X	X	VL		X			X	X		X		X	X		X		X			X						
Stephenson A/C	X	X	VL		X			X	X	X	X	X	X	X		X		X			X						
Van Bergen		X	X			X		X			X		X			X					X	X	X		X		

OR: operating room
RT: resuscitation therapy
VL: volume limited

Circuit type a. Intermittently opening reducing valve
b. Electrically driven piston or pneumatically driven piston
c. Compressible rebreathing bag in patient's circuit

e. Nunn introduced a method of spirometry applicable to all types of circuits

f. Roswell-Park ventimeter—another bellows type spirometer.

Radford Normogram

Radford has introduced his normograms, which consist of a series of graph and tables, from which a patient's minute volume can roughly be predicted. Allowance is being made for factors such as age, sex, size, and temperature.

Clinical signs, though said to be unreliable, cannot be lightly dismissed, and it seems to me a triumph that clinical anesthesiologists appear to maintain adequate and efficient ventilation without the aid of complicated monitoring devices.

Aids to Ventilation

The usual method for assisted or controlled respiration is by compressing the rebreathing bag of the anesthetic machine. The so-called "educated hand" is controversial, but the main advantage of this method is to obtain important information from "squeezing the bag" including presence of respiratory obstruction, compliance of the chest wall and lung to inflation, detection of spontaneous respiratory efforts indicating the need for deepening the level of general anesthesia or administering muscle relaxants.

The disadvantages are:

1. The method is inefficient and tiring
2. One is tied to the machine, though according to Dobkin and Wyant this is an advantage
3. One cannot incorporate a negative phase, though according to Cherniak this is advantageous in emphysematous patients as one cannot lower the pCO_2 in these patients to dangerous level.

Various aids to respiration and ventilation have been devised. The term "Respirator" usually refers to apparatus applied outside the body and "Ventilator" usually applies to devices attached directly to the airway. The former were considered more physiological in simultating normal respiration though Morch advocated intermittent positive pressure breathing as being preferable in patients with a tracheostomy.

Ventilators

1. *Semi-mechanical*
   a. Mackintosh bellows
   b. Kreissleman bellows
   c. Potter foot pump
   d. Ambu pulmonator
   e. Etsten ventilator
   f. Mackay manual respirator

These are inexpensive and Etsten's and Mackay's will very easily give pressures from plus 20 to minus 10 cm. water.

2. *Mechanical*

The ideal in mechanical respirators varies from authority to authority. The biggest controversy today involves the two types of controls; pressure controlled—volume variable; and volume controlled—pressure variable. In clinical application these are of more theoretical than practical importance.

Ventilators may be driven by electricity or by compressed gases. Basic control may be by pressure, by volume or by time. Some are controlled by combination of all three. Most respirators work continuously, but some have been devised which are initiated by the patient's respiration and provide assistance to their spontaneous efforts. So many ventilators have been introduced and their design is of such complexity that recently an excellent book, *Automatic Ventilation of the Lungs* by Mushin Baker, and Thompson has been published which describes 35 ventilators. This is a bewildering array. The main features of the most widely used are shown in *Table I.* Any of these may be satisfactory when used properly. The Jefferson ventilator, a development of the prototype of Allbritten was among the first to be fully investigated. Nealon found during open pneumothorax that ventilation was adequate and operative conditions good with pressures of plus 15 mm. Hg. and minus five mm. Hg. phases one to two. These conditions gave a mean endotracheal pressure of five mm. Hg. and mean minute ventilation of 10 litres. When the mean endotracheal pressure was three, the lungs were partially collapsed and when the mean pressure was seven the lungs were overdistended. He described the effects of other pressures.[36]

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Gilchrist's Disease

A Case Report of North American Blastomycosis

MARVIN DUNN, M.D., ***and*** **PATRICK McCANN, M.D.,** ***Kansas City***

North American blastomycosis (Gilchrist's disease) is uncommon in Kansas.[1, 2] We recently observed a patient with far advanced North American blastomycosis at the University of Kansas Medical Center. Although the disease was probably contacted elsewhere, he came to us as a patient with an undiagnosed systemic disease which was difficult to differentiate from multiple myeloma or carcinomatosis.

Case History

This 54-year-old Negro male laborer was admitted to KUMC in November, 1959, with complaints of weakness, shortness of breath, weight loss, and ulcers of the face.

In January, 1959, while employed in a canning factory in Chicago, he first noted the onset of weakness and anorexia. At that time he developed a cough which was productive of white sputum. He was seen by a physician and was treated for tuberculosis for an undetermined period of time. In spite of this therapy his symptoms progressed and he noted a weight loss of ten pounds in March, 1959.

In May, 1959, a small papular lesion developed on the skin over the right zygomatic arch. This lesion ulcerated and gradually enlarged.

In July, 1959, because of progressive weight loss, anorexia, and weakness, he moved to Kansas City to live with a sister who could care for him He became short of breath and consulted a physician. Chest x-ray and several sputum specimens revealed no evidence of tuberculosis. He was digitalized and given iron tables for anemia.

Two months before admission a fungating, verrucous lesion developed over the upper lip. His symptoms continued, and by the time of admission he had lost 42 pounds of weight, could not walk, and was dyspneic at rest.

He denied a history of contact with tuberculosis or other infectious disease. He had experienced no major medical or surgical illnesses. In 1946 he received a shotgun wound. He had lived in Chicago for four years. Before that he lived on a farm in Arkansas.

The physical examination revealed a chronically ill, poorly nourished, emaciated, torpid, dysarthric, Negro male. The blood pressure was 100/65; pulse, 104 and regular; temperature, 101. Examination of the eyes, ears, nose, and throat was negative. There was a circular skin ulcer over the right zygomatic arch which was four cm. in diameter. The base of the ulcer was granular. The skin edges were discrete but neither raised nor indurated. There was a 2 x 1 x 1 cm. fungating verrucous mass over the right lip near the midline. There was no significant lymphadenopathy. Several shotgun pellets were palpable in the subcutaneous tissue of the chest. The left sternoclavicular joint was enlarged and tender. The chest excursion was decreased and the breath sounds were diminished. There were no rales. There was no dullness to percussion. A Grade III apical holosystolic murmur was present. Examination of the abdomen was negative except for the presence of shotgun pellets in the subcutaneous tissue.

A case of far advanced North American blastomycosis was presented. The case was unusual because of the far advanced bony involvement and because of its occurrence in Kansas. The patient probably developed the disease in Chicago where blastomycosis is endemic.

Laboratory Examination

Laboratory examination revealed a hemoglobin of 7.4 grams per cent, WBC 9,900, 83 polys, 15 lymphs, two monocytes and 88,000 platelets. The VDRL was non-reactive. Urinalysis was negative. The BUN was 12 mg. per cent. Serum electrolytes were as follows: sodium, 135 mEq.; potassium, 4.6 mEq.; chlorides, 86 mEq; CO_2, 37.8 mEq.; calcium, 4.5 mEq., and phosphorus, 1.9 mEq. Histoplasmin and tuberculin skin tests were negative. The vital capacity was 1.4 liters. Bence-Jones protein was not present in the urine. Sickle cell preparation was negative. Sputa were negative for acid fast bacilli. Hepatic function studies revealed the following values: direct bilirubin, 0.1 mg. per cent; total bilirubin, 0.3 mg. per cent; alkaline phosphatase, 1.1 millimol units; BSP retention, 6 per cent; thymol turbidity, seven units; albumin, 2.39 gms. per cent; globulin, 2.54 gms. per cent;

From the Department of Medicine, University of Kansas Medical Center, Kansas City, Kansas.

Figure 1. Chest x-ray revealed an insignificant degree of pulmonary disease in spite of widespread bony disease. Note the erosion of the anterior portion of the second and third ribs on the left as well as the shotgun pellets which were lodged subcutaneously.

chlolesterol, 133 mg. per cent with 56 per cent esters. The EKG revealed myocardial ischemia.

X-rays revealed multiple osteolytic lesions of the ribs, cervical and lumbar vertebrae, and the right ilium *(Figures 1 and 2)*. Multiple myeloma or carcinomatosis was suspected. A bone marrow biopsy revealed an essentially normal marrow. A needle biopsy of the enlarged left sternoclavicular joint was performed, and Grocott stain of the tissue revealed organisms compatible with Blastomyces dermitidis *(Figure 3)*.

Before the tissue diagnosis was established, the patient left the hospital against medical advice and died at home two days later. During his hospitalization he received aspirin for pain and 2 units of whole blood.

Discussion

North American blastomycosis was first described in its cutaneous form in 1896 by Gilchrist, but was not recognized as a systemic disease until 1902.[4] The responsible organism, Blastomyces dermitidis, is a fungus with a yeast phase of development. Although the organism has been isolated for over 60 years, the mode of transmission to man is unknown.[5]

North American blastomycosis is endemic in certain areas of Michigan, Wisconsin, Illinois, and Louisiana, but is rare in Kansas.[6, 7] Because of the high incidence in Chicago, it is sometimes called "Chicago disease."[1] There is no racial, occupational, or definite seasonal distribution. Males are affected more commonly than females. Schwarz and Baum have postulated that the disease is probably systemic except in those cases where direct skin inoculation can be proved. According to their belief the cutaneous form represents a hematogenous spread from a primary pulmonary site which they consider the portal of entry. The cutaneous lesions which have been produced by accidental inoculation of infected material into the skin differ in appearance and clinical course from the cutaneous form of systemic blastomycosis. The systemic form of the disease involves the following organ systems in this order of frequency: lung, skin, bone, and genitourinary tract.

Pulmonary blastomycosis may be a subclinical[7] infection or may manifest itself as an exudative pneumonia, pleuritis, diffuse granulomatous infiltrate, or as a bronchopneumonia producing a clinical picture of low grade fever, vague chest pain, night sweats, productive cough, and hemoptysis. The pulmonary focus of infection may be radiologically insignificant even in the presence of far advanced systemic disease.

Latent Period Possible

A latent period of several weeks to several months may follow the pulmonary infection after which hematogenous spread of the disease occurs. The skin

Figure 2. X-ray of the abdomen revealed osteolytic lesions of the transverse processes of several lumbar vertebrae, the 11th rib on the left, and the crest of the right ilium.

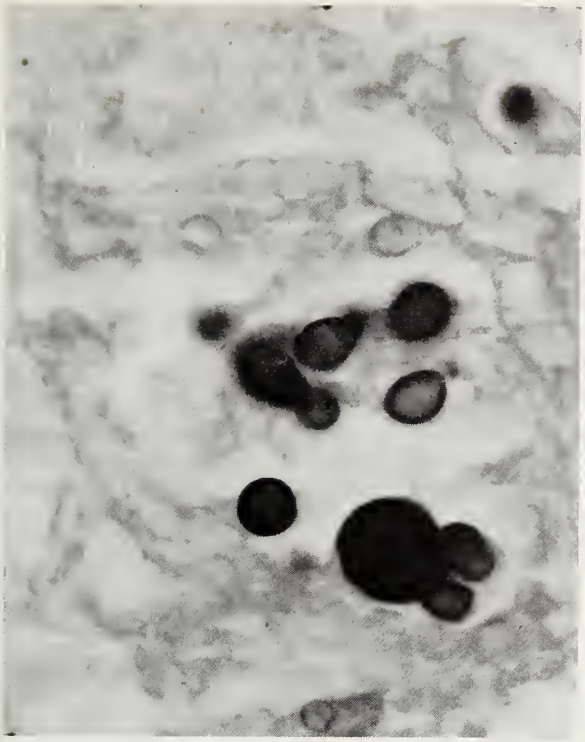

Figure 3. Tissue obtained from the left sternoclavicular joint was stained with Grocott's stain. Microscopic examination revealed multiple doubly refractile, budding organisms characteristic of blastomyces dermitidis (x 1,000).

lesions begin as papulopustular lesions which enlarge by peripheral extension and central ulceration forming elevated, erythematous, exuberant, and verrucous granulomas. There is usually a sharp border between the involved and uninvolved skin.[5]

The bony lesions are usually osteolytic involving the ribs, vertebrae, and rarely the long bones and joints. Bone marrow depression may produce pancytopenia. The genitourinary lesions consist primarily of abscesses in the prostate, epididymis, and seminal vesicles.

A positive diagnosis can be made only by culturing the organism or by identification of the organism in biopsied or postmortem tissue.

Recently excellent results have been obtained by treating patients with Amphotericin B.[5] Apparent cures have occurred in patients with far advanced systemic disease.

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Postgraduate Medicine

(Continued from page 113)

these were enrolled in correspondence courses, but this still leaves over 3,000 physician enrollments at the Medical Center. Circuit attendance increased only a small percentage. The total enrollment was 5,623 for a gain of 252. The 14 clinical traineeship enrollments represent a small but exceptionally gratifying part of the registration.

The Battenfeld Auditorium, the postgraduate offices and the other units of the Student Center-Continuation Study Building are well known to the physicians of this area as the facilities so vital to our program. We wish to mention them only to point up this prize setting for our programs.

This has been our most satisfactory year based on what we feel to have been superior teaching accomplishments, new program developments, good enrollment totals, a reduction in unit costs, and continued approval by our student body. With stability in administrative, operational and fiscal matters the program becomes even more certain of continuing to serve the medical profession in a meritorious manner.

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Color Blindness in Hunters

Because almost all color-blind persons have red and green blindness, Dr. Hubert Waldemar Lee of Brainerd, Minn., suggests that a few lives could be spared during the hunting season and perhaps on the highway if licenses were withheld for this cause. Some 4 per cent of men and 0.5 per cent of women are color blind. He points out that almost all states have rulings requiring deer hunters to wear red clothing, thus "a few of the accidental deaths must be due entirely to color blindness. In a totally color-blind person all colors vary in their degree of brightness from white through grays to black. Persons with red-green blindness are often unaware of this fact and resent being informed of it." State motor vehicle departments do not test nor withhold licenses for color blindness, he added.—*J.A.M.A.*, Nov. 21, 1959.

Cancer of the Breast

Radiation Therapy of Carcinoma of the Breast Supplementing Surgery

GALEN M. TICE, M.D., *Kansas City*

In our years of experience in treating malignancy we have been impressed with the change in concept relative to the correct method of treating breast cancer. During the years from 1930 to 1940 it was routine in our hospital to refer all operable breast cancer cases for radiation, usually after radical removal of the breast. Some time during the decade, 1940 to 1950, the thought was passed about in surgical circles that surgery was self-sufficient in the conduct of treatment of all breast cancer cases except the inoperable cases. New super radical operations were suggested as the answer to the breast cancer problem.

New Surgical Attitude

Handley and Thurston[3] in 1947 reported, "In five unselected cases of carcinoma of the breast, a lymph gland of the internal mammary chain was removed through the second intercostal space at or shortly after radical mastectomy. In four cases the internal mammary gland was histologically proven to contain cancer. In only two of these cases were there axillary deposits." This observation apparently suggested to the surgeons that it was possible to eliminate breast cancer metastases, if local, by surgery with no supplemental assistance from the radiologist. Our chief surgeon stopped referring his postoperative cases to us and new younger surgeons trained elsewhere, who came to our institution about this time, did not refer theirs. Our interest in radiation of the postoperative breast case was not entirely dissipated, as some surgeons apparently were not convinced that surgery alone was adequate. Over the years our referrals for radiation have not appreciably diminished, despite the changing attitude of our own staff surgeons.

Breast cancer is such a ruthless killer and is so unpredictable that any contribution by the surgeon, endocrinologist or radiologist should be viewed with critical appraisal before it is dismissed as of no value or harmful. Just as the surgeon in some instances considers his services self-sufficient, so have the radiologists in some instances indicated that their contribution is most important. At a national radiological meeting a few years ago a prominent radiologist in a round table discussion made the statement that in the operable group of cases we can expect ten per cent more five-year survivals if radiation is used to supplement surgery. We are sure that if this could be definitely substantiated there would be no hesitancy in referring these women for radiation after or before surgery. It is doubtful if any group of statistics will be acceptable to everyone, because of the many factors involved in the collecting of statistics. Unfortunately advocates of surgery without subsequent radiation, and those who advocate radiation as an adjunct to surgery sometimes become emotional in advocating their favored mode of therapy and seem not to want to see the advantages of the other modality or the disadvantages of the method they favor.

Our experience in treating breast cancer in conjunction with surgery reveals 48 per cent five year survival in Stage I and II, the operable group. This included 730 patients. If the inoperable group III and IV is included there is a total of 907 cases. The overall per cent of five year survival is 39.7 per cent.

Our series is somewhat unusual because many surgeons and only one radiologist were involved in the treatment plan.

History

Our experience in treating breast cancer goes back to 1930, 29½ years ago. We have kept quite accurate records since 1934. We do not want to clutter the literature with information and comments about something that has been described many times before, nor do we have anything particularly new to describe. We do, however, feel impelled to summarize our experience, and we will make a few comments which will largely be a review of our thoughts and those of others. There is nothing unique about these cases except that the radiation was planned and administered by one individual with the assistance of many different men in training. The surgery was done by many different surgeons. During the period from

Dr. Tice is a Professor and Chairman of the Department of Radiology, University of Kansas School of Medicine, Kansas City, Kansas.

1930 to 1955 post or preoperative cases were referred to us by 218 different surgeons, so that the results reported will have no relationship to any particular type of surgery. Most of the cases were treated by an efficient type of Halstead radical surgical procedure. Ninety cases, advanced or very aged, had a simple mastectomy followed by radiation. Radiation, even though planned and administered by one man and his residents, varied with facilities available. In 1930 the radiation was given using 140 Kvp, an open lead glass bowl, and non-shockproof wires leading off of a transformer that was used for diagnostic work for half of the day. Later a therapy couch was acquired with a porthole on top over which the area to be treated was placed. The contribution here was an increase to 200 Kvp. In 1940 the more modern orthovoltage machine utilizing 250 Kvp was made available, and during the last year a Cobalt-60 unit is being used for part of the treatment. During the last 25 years we cannot point to any one treatment machine or treatment schedule as being the answer to the breast cancer problem. We have tried to keep in touch with modern advances and have tried a few variations on our own initiative. We have treated our cases with the maximum dose of radiation available, avoiding as much as possible damage to normal structures. We have recognized that a certain amount of damage to other than tumor tissue must be an acceptable calculated risk if we are to destroy cancer cells.

Keeping a Registry

Over the years we have felt impelled, as should everyone treating cancer, to keep in touch with our patients. For many years we maintained our own follow-up system, but now we are assisted by the personnel of an efficient tumor registry. We have lost contact with 77 cases, 7.4 per cent of our total, and in our report we consider these cases dead on the last contact.

Many patients have died of diseases related to senility, some as the result of accidents, and a few due to intercurrent infections, but these are all included in the series report. For purposes of reporting we refer to Portmann's classification.[8] We have modified it by including all tumors six cm. or larger in Stage III as described by Ash.[1] Portmann's classification of breast carcinoma is as follows:

PORTMANN'S CLASSIFICATION OF BREAST CANCER

Group or Stage I

Skin ..... Not involved
Tumor ... Localized in breast and moveable
Metastases None

Group or Stage II

Skin ..... Not involved
Tumor ... Localized in breast and moveable
Metastases Few in axillary lymph nodes

Group or Stage III

Skin ..... Edematous, brawny red with induration or inflammation, not obviously due to infection, extensive ulceration, multiple secondary tumors
Tumor ... Diffusely infiltrating the breast; fixation of the tumor of the breast to the chest wall; edema of the breast; secondary tumors (Ash modification—6 cm. in diameter)
Metastases Axillary node metastases

Group or Stage IV

Skin ..... As in any other group
Tumor ... As in any other group
Metastases Axillary or supraclavicular nodes extensively involved; clinical or roentgen evidence of distant metastases

From 1930 to 1955, 907 Cases Treated

During the period 1930 to 1955, 907 cases of primary breast carcinoma were treated either pre or postoperatively or as a primary treatment, in a few hopeless, far advanced cases. During this same period 183 cases of recurrent tumor were referred for radiation. This group included bone metastasis, skin metastasis, ascites or pleural effusion, recurrent supra or axillary gland involvement, and, in a few cases, lung, liver or brain metastases. None of these cases

TABLE I

ALL CASES OF PRIMARY CARCINOMA OF THE BREAST

Stage	*Total*	*Less Than 5-Year Survival*	*Over 5-Year Survival*	*Over 10-Year Survival*	*Over 15-Year Survival*	*Over 20-Year Survival*
I	322	130	192 (59.6%)	98 (30.4%)	42 (13%)	8 (2.5%)
II	408	250	158 (38.6%)	65 (16 %)	32 (8%)	11 (2.7%)
I and II	730	380	350 (48 %)	163 (22.3%)	74 (10%)	19 (2.6%)
III and IV	177	167	10 (6 %)	0	0	0
All Stages	907	567	360 (39.7%)	163 (16.7%)	74 (8%)	19 (2 %)

TABLE II

RECURRENT CASES OF CARCINOMA OF THE BREAST*

Total	*Lived Less Than 5 Years*	*Over 5-Year Survival*	*Over 10-Year Survival*	*Over 15-Year Survival*
183	155	28 (15%)	7 (4%)	1 (0.6%)

* Metastases to bone, skin, serous surfaces, lung, liver, brain, glands.

TABLE III

PREOPERATIVE RADIATION OF CARCINOMA OF THE BREAST

Stage	*Number of Cases*
I	13
II	7
III	16
IV	4
Total	40

were treated with the cobalt unit. Most of them were treated with orthovoltage, or in some cases of skin metastasis, superficial. Our results in terms of survival are listed in *Table I.*

A case of recurrent carcinoma of the breast cannot be measured in terms of longevity in most instances. These individuals with complications of metastasis as listed in *Table II* are often in great pain or mental distress. Nitrogen mustard, estrogens, androgens, and other forms of medication must certainly be used in attempting to alleviate their suffering. Despite the many new innovations for treating hopeless cancer radiation therapy still is perhaps in first place in giving pain relief. Occasionally the case with skin metastasis or metastasis to the supraclavicular glands may be given a relatively long lease on life if there is no other evidence of metastasis. Unfortunately the tumor that spreads to the bone and skin or glands often is already dissipated to other organs of the body so that early death is inevitable.

Case Longevity

In *Table II* we have listed our results in terms of longevity for cases with recurrent cancer of the breast, cases that have been operated and treated elsewhere.

In our experience only those in Stage I and II have a chance for survival. In group III and IV none had radical surgery. A few had simply mastectomy with the thought by the surgeon that a sloughing breast might be removed to make life a little more comfortable. It is our reaction that this bit of surgery might be avoided in favor of intensive radiation to the breast. If we include only Stage I and II, the operable group, our five-year survival was 48 per cent and 10-year survival was 22.3 per cent. If the relatively hopeless III and IV groups are included to make a total picture of those radiated, a group which totaled 177 cases and in which radiation was the only treatment because of the advanced stage of the disease, the five-year survival is 39.7 per cent and the 10-year survival is 16 per cent. Other statistics procured from this study indicate carcinoma in both breasts in 40 cases (4.4 per cent of the total). Cancer of the male breast was seen in 11 cases (1.2 per cent of the total). The prognosis in our series of male breast carcinoma was extremely poor. Most of the cases were far advanced when first seen. The average survival for this small group was 1.75 years. There were no five-year survivals.

Preoperative Therapy

To us an interesting facet of our survey of breast cancer relates to preoperative therapy. In 1938 the late Dr. T. G. Orr, at that time chief of the surgical

TABLE IV

SURVIVAL OF PREOPERATIVE CASES OF CARCINOMA OF THE BREAST

Stage	*Number of Cases*	*Lived Less Than 5 Years*	*Lived 5 Years*	*Lived 10 Years*	*Lived 15 Years*	*Lived 20 Years*	*Still Living Over 20 Years*
I	13	1	12	9	7	5	5
II	7	3	5	2	2	1	0
III	16	10	5	3	2	1	0
IV	4	4	0	0	0	0	0
Total	40	18	22	14	11	7	5

TABLE V

PERCENTAGE SURVIVAL OF THIS TREATMENT SYSTEM

	Per Cent
Five years or more survival	55
Ten years or more survival	35
Fifteen years or more survival	28
Twenty years or more survival	17.5
Living at present beyond 20 years	12.5

service at the University of Kansas Medical Center, agreed with the author to treat a series of breast carcinomas with preoperative radiation followed by surgery. Forty cases were treated in that manner, and in all but two cases biopsy was obtained prior to radiation. Surgery was done in an average time of six weeks after radiation was completed. *Table III* indicates the staging of this group of 40 patients.

Four of the cases have been lost to follow-up, and are listed as dead on the last date contacted. As in the other group causes of death other than cancer were involved in some of those dead. The survival incidence of the group is listed in *Table IV*.

Dr. David Robinson[9] reported on a survey of all breast carcinoma cases recorded as hospital patients in the University of Kansas Medical Center before 1943, and operated upon by the staff surgeons at the Medical Center. If radiation was ordered it was given by the author and his residents. It includes some of those listed in our report but does not include those referred in for radiation as outpatients operated elsewhere. Since all of the patients reported by Robinson had surgery they would fall into the Stage I and II group, and most of them would fall into the group that had surgery supplemented by radiation therapy. He reported 44.3 per cent five-year survival as compared to our report of 48 per cent in Stage I and II. For comparison we quote survival rates as reported by other investigators. Ash who is interested in preoperative therapy reports in *Table VI:*

TABLE VII

ABSOLUTE FIVE-YEAR SURVIVAL RATES IN BREAST CANCER*

Author	*Place*	*Year*	*Rate (Per Cent)*
Nohrman	Stockholm	1949	40
Smithers, *et al*	London	1952	35
Williams, *et al*	London	1953	34
Bryant, *et al*	Michigan	1954	40
McWhirter	Edinburgh	1955	42
Hickey, *et al*	Iowa	1956	36

* As reported by Murphy in his book, *Radiation Therapy.*

Murphy[6] in his book, *Radiation Therapy* lists the survival reported by other authorities. These reports are listed in *Table VII.*

Taylor and Wallace[11] reporting on 50 years experience at the Massachusetts General Hospital state, "At the present time radical mastectomy may be expected to result in a five-year 'cure' in about half of the cases submitted for operation." They did not

TABLE VI

SURVIVAL OF BREAST CANCER WITH VARIOUS TYPES OF TREATMENT AS REPORTED BY ASH, *et al*

Method of Treatment	*Per Cent 5-Year Survival*	*Per Cent 10-Year Survival*	*Type of Case*
Untreated—Daland	22	1	All untreated
Untreated—Nathanson and Welch	19	5	All untreated
SURGERY ALONE			
Collected cases	33	32	Cases selected
Excluding the categorically inoperable group—Presbyterian Hospital	50	With involvement of axillary nodes—Presbyterian Hospital, 20; Memorial Hospital, 21	Cases selected for radical mastectomy, mostly Stages I-III
Radical mastectomy and postoperative therapy—Toronto General Hospital	43	With node involvement, 23	82% Stage I-III 18% Stage IV-V
Simple mastectomy postoperative therapy—McWhirter	42	25	All cases 56% operable

routinely submit their case for radiation as a supplement to surgery. They agree, that selection of cases to be operated is a most important factor in ultimate survival statistics.

Hagensen[2] showed a survival of 74.3 per cent of Stage I with radical mastectomy, and a survival of 38.3 per cent with axillary metastasis.

Harrington[4] showed a survival of 45.4 per cent among 800 women in Stage I, II and III.

McWhirter[5] whose contribution was in the realm of postoperative therapy after simple mastectomy reported 43.7 per cent five-year survival. Seventy-seven per cent of this series had metastasis.

Nathanson and Welch[7] reported 25 per cent dead in the first year out of 100 cases of breast carcinoma that were not treated; an additional 25 per cent died in 2.5 years; 25 per cent lived over four years. In a series of 1,550 treated cases 75 per cent died in 6.5 years. In five years there were 25 per cent more alive in the treated cases than in the untreated cases. The average length of life from the patient's knowledge of the onset of disease was 3.5 years in patients treated in the years 1912 to 1932, compared with 2.5 years in the untreated group.

Cancer Cases

We are faced with the statistical evidence that there is not much diffierence in the five-year survival in patients with breast carcinoma as reported by various observers. There are many intangible factors to consider. Case report No. 1 illustrates the patient who lived with her cancer for many years, and she is still living. It would be difficult to say that she is alive because of either surgery or radiation. Either she had a slowly growing carcinoma that metastasized slowly and grew indolently, or her inherent resistance of the tumor bed to tumor expansion was such that she tolerated the tumor better than the average case. We are sure that in many cases of longevity this inherent resistance to the growth of the tumor is an important factor. Pregnancy in the past has been considered an exciting factor in tumor growth. In our experience pregnancy has not been in the average case a factor producing rapid rate of tumor growth.

Case I

Our first contact with this 73 year old patient was in June, 1954. She gave a history of having had right mastectomy on June 23, 1930 in a hospital in Kansas. A diagnosis at that time of scirrhous carcinoma of the breast was made. This was a simple mastectomy.

In 1948 she noticed a nodule in the right axilla. This was removed at the University of Kansas Medical Center. A diagnosis of infiltrating adenocarcinoma of the right axilla was made.

In 1954 on our first contact a nodule was found in the right supraclavicular area. This was biopsied and was reported metastatic nodule in the supraclavicular area. At that time radiation therapy was given to this supraclavicular area.

In February, 1959, she returned with a tumor mass measuring 4 x 2 inches in size attached to the right posterior axillary fold. There was a nodule 1 cm. in diameter on the upper right chest wall. The solitary nodule was treated with 5,000 r. as we would treat a skin cancer. The mass on the posterior axillary fold was treated with oblique portals, cross firing for a dose of 5,155 r. depth dose. The skin nodule disappeared rapidly. The large posterior axillary mass disappeared slowly. This was last seen on November 30, 1959. At that time the posterior axillary mass was a warty mass about two cm. in diameter. It had not completely disappeared. Chest examination showed no intrinsic lung disease. The supraclavicular area showed small hard glands not over .5 cm. in diameter. The patient was feeling quite well. She is now 79 years old.

This case is reported to show the variation in tumor growth and tumor spread. The patient was diagnosed and treated thirty years ago for a cancer. She was not followed by radiation at the time of original operation or the second operation for the axillary node. Radiation was given when the supraclavicular gland was diagnosed six years ago. We do have definite evidence that there has been destruction of the tumor in the posterior axillary fold. One can only surmise that if she had had radiation at first in 1930 she might not have had the subsequent recurrence described. This is a matter of conjecture only.

Radiation Destroys Cancer Cells

Even though we as radiologists cannot quote conclusive figures to justify the surgeon sending his postoperative cases to us for radiation, there are certain facts that would seem to justify this procedure in all except the case of the tumor with a small moveable mass in the breast and no axillary glands. Even here there might be a reason for postoperative therapy because of our inability clinically to recognize cancer involved glands in every case by palpation and inspection. Saphir and Amromin[10] were able by meticulous care to find cancer cells in 30 per cent of glands reported as free from cancer by routine examination. It seems to us that there are bits of evidence that breast cancer may be destroyed or temporarily controlled by irradiation. Where there is visible cancer on the chest wall, perhaps related to an inoperable breast malignancy or recurring nodules on the chest wall these obvious tumor masses may be made to disappear with proper radiation. The patient with bone metastasis diagnosed by clinical findings and x-ray examination will get pain relief, and, in many instances, subsequent examination will show that areas of bone loss have been replaced by deposition of new calcified bone. We are most impressed by the cases that have received preoperative radiation. The biopsy of tumor

tissue prior to radiation makes the diagnosis of cancer. The study of tissue removed after radiation at the time of surgery almost invariably is reported by the pathologist as showing changes due to radiation. He may report complete disappearance of tumor, or he may indicate that there are shrunken, damaged tumor cells. In the tumor bed reports are made of hyalinization, fibrosis and endarteritis. Case II is given to show the pathological change in the tumor following radiation.

Case II

This 51 year old white female was admitted on March 2, 1938, for biopsy. She had previously reported a lump in her breast which had been present for thirteen months. This lump was located in the upper outer quadrant of the right breast. It was hard, nodular, and freely moveable. It measured 3 cm. in diameter. Biopsy was taken on 3-3-38. The mass was not completely removed. Two bits of tissue measuring 2 x 1.5 x .8 cm. and 1.5 x 1.5 x 1 cm. were submitted to the pathologist. The path report in part is as follows: "Large irregular sheets and masses of epithelial cells often infiltrated into the adjacent tissue and showing a scant amount of stroma can be recognized. This latter tissue has the appearance of medullary carcinoma. Diagnosis: Medullary carcinoma of the breast."

In a period of one month the patient was given radiation to the glandular areas. The breast and chest wall were treated with a cross fire application of x-ray. Examination of the breast on May 13, 1938 prior to surgery was as follows: "Examination of the right breast at the time of admission showed a healed biopsy scar in the upper outer quadrant. The underlying tissue was somewhat indurated, however, there was no definite tumor tissue present. No glands were palpable in either axilla or supraclavicular areas." Radical breast surgery was done by Dr. T. G. Orr on 5-16-38. Path report on this patient is in part as follows: ". . . On one side of the nipple is seen a small well healed surgical incision. . . . This incision may be palpated as a definite tumor mass, somewhat irregular in contour, measuring about 4 x 5 cm. in diameter. Sections of the mass which is firm and rubbery reveal a fibro cellular-like tissue which shows no definite architecture. It is rather diffuse. . . . The tissue cuts with considerable resistance. The normal architecture of the breast appears to have been destroyed. In the axillary plug . . . is no evidence of metastasis. However a larger nodule—on cut section has somewhat of a gray cellular-like appearance presenting no definite architecture. The latter is suggestive of tumor metastasis." Histological pathology: "Diagnosis, post-x-ray sclerosis of a breast carcinoma with a few shrunken tumor cells still present; chronic lymphadenitis."

This report is not unique. It is true that in some of the cases the entire one or two cm. tumor was removed. That was not true in this case. In this series of forty cases treated with preoperative radiation the following notation was made by the pathologist 18 times: "shrunken, atrophic, or unrecognizable tumor cells." In 25 reports the note was made that there was hyalinization, fibrosis or endarteritis."

This patient was operated in 1944 for carcinoma of the bladder and later for carcinoma of the cecum. She died on September 16, 1951, 13½ years after the breast tumor was diagnosed and removed.

Conclusions

A series of 40 cases received radiation before surgery. In this group there were 55 per cent who survived five years or more; 33 per cent, 10 years; 28 per cent, 15 years; and 17.5 per cent, 20 years. It would seem logical to make this a standard procedure.

It is most difficult to compare series of cases reported with different plans for management and with different degrees of tumor development and spread. There is evidence that cancer may be destroyed by irradiation. There is evidence that fibrosis, hyalinization and endarteritis may alter the tumor bed to theoretically interfere with tumor spread. We cannot statistically prove that radiation therapy, at least postoperatively given, will increase survival rates; preoperatively given perhaps it does. When we see the direct effect of radiation on primary tumor and metastatic deposits in skin and bone we feel it should be used routinely as an adjunct to surgery. We suggest that it should be used more often preoperatively.

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Corrective Bowling

From a Scientific Approach

DR. TUNG N. CHEKE,* *Kansas City*

There has been increasing emphasis in recent years, as the thoughtful reader of editorials has undoubtedly noticed, on recreation for physicians. Practically everything from chess to taxidermy has been recommended at one time or another. Bowling has also been mentioned, it is true, but always the stress is on fun and socializing. I say, let's talk about the *science* of bowling.

Most bowlers have such a good time that they often neglect to analyze and correct their bowling faults; consequently, they never attain a truly professional status. I have developed a system which is guaranteed to eliminate bowling errors of technique. My system has a remedy for any bowling "ailment." These are numerous, but fall into one of the following categories: (1) approach, (2) swing and release of ball, and (3) aim and pinfall. You will no doubt be interested in the following examples taken from my Pilot Program, in which I systematically analyzed and corrected the faulty techniques of the other members of my bowling team. I completed this initial project during the final month of the last league season and, if I may say so, with rather remarkable results. As you, too, may wish to use my corrective bowling system on your teammates (as well as improve your own style), I will describe briefly the process used.

Watch That Approach

First, approach. Ed had undoubtedly the worst approach of any man on the team, so I began with him. As he had short arms, he tried to increase the speed of the ball by using a fast five-step approach, often sliding right across the foul line. You may have heard the bell and seen the red light flash in your own league, as someone crossed the foul line. With my system, this never happens. I simply instructed Ed to take his five steps *on his knees!* This is so basic and simple that, like all great ideas, you wonder why no one ever thought of it before, don't you? And the beauty of it is that it really works. Not once did Ed ever cross the foul line using my system of approach. I am really sorry that he didn't stick with this system, as I am sure that his knees would have toughened in time and I still feel that the plastic surgeon was a little premature in applying the skin grafts.

Second, swing and release of the ball. It is well known to all bowlers that a good backswing increases the power of the ball as it is released. My system utilizes this essential point. Instead of the conventional method of holding the ball with both hands at the chest level and swinging down, back, then forward as you make the approach, do it the scientific way—as I told Wilbur. I instructed him to start with the ball hanging down at his side, then swing it forward (instead of backward) and allow the weight of the ball to carry it up and *overhead* and back, making a full circle with the ball. When the ball comes down and forward again, it has *real* power! Naturally, this requires a firm grip at all times, as release of the ball on its downward descent could seriously disable the end man on the bench. However, Wilbur was always a little clumsy, and I am sure that, once the lawsuit is settled, he will be more cautious when he begins to bowl again and will hold the ball more securely.

Keep a Sharp Eye

Third, aim and pinfall. This, after all, is the factor that causes the points to add up to a good score. I find that many bowlers do not follow through sufficiently. Herb was a good example of poor follow-through. He was, however, an excellent student and corrected this fault on his first lesson from me. My scientific system was again proved effective. I simply instructed him to lean farther forward as he released the ball, and not just from the waist but starting with the ankles. In this way, the entire body participates in a smooth follow-through. Using my system for the first time, Herb was able to throw a ball with a perfect hook, hitting the 1-3 pocket squarely, and resulting in a *strike!* He may even have given the ball a shade too *much* follow-through, as I explained to him in the hospital afterwards. Incidentally, those of you who know Herb might do well to just sort of ignore the subject of his nose, although actually it

(Continued on page 131)

Department of Physical Medicine, University of Kansas School of Medicine.

* We are well aware that the American Medical Association has recently recommended that the use of the term "doctor" be dropped in signatures, titles, etc., but we are faced with a rather unusual situation here, in that Dr. Cheke answered our inquiry in this matter with the information that the only degree he had ever been able to acquire was a second degree, occurring when he inadvertantly picked up a lighted cigarette by the wrong end.

Editor's note: We are indebted to Marilyn K. Hutchison, M.D. for translating this article from the original which was a composite of pidgin English and lingua franca.

"Liver Function" Tests

Interpretation and Use of Various Methods

ROBERT T. MANNING, M.D., ***and*** **MAHLON H. DELP, M.D.,** ***Kansas City***

THE NUMBER OF LABORATORY procedures which have been proposed as "liver function" tests has become too numerous to recount. This simple observation should emphasize that there is no "liver function" test available. All tests presently in use are indirect measurements of one or more aspects of liver metabolism, and in addition are not infrequently altered by disturbed physiology outside the liver. The multiplicity of metabolic activities of the liver further limits the usefulness of any single test as a means of assaying altered hepatic metabolism. Despite their limitations, however, certain tests have proven of value both in diagnosis and prognosis.

Selection of Tests

As outlined, the many functions of the liver preclude use of any single test as a means of defining liver pathology. Certain tests, however, may conveniently be grouped as indicated in the accompanying tables for the purpose of more direct application to the problems of *detection, differential diagnosis* of jaundice, and *prognosis* in liver disease.

Repetition of tests is of considerably more value than single values. Weekly assay of such tests may be of particular value in obscure liver pathology and prognosis.

Excretory Function

Bilirubin—urobilinogen. Some of the details of bilirubin excretion have been elucidated in the past three years. Bilirubin, produced incident to normal red cell destruction, is carried to the liver where it is conjugated with glucuronic acid and excreted into the bile. The unconjugated free bilirubin is identical with the delayed or indirect fraction of old terminology and the direct, prompt or one minute fraction is essentially bilirubin glucuronide.

It follows, therefore, that bilirubin accumulates in the blood, and clinical jaundice appears wherever the capacity of this conjugating mechanism is overwhelmed. This may occur when a normal liver receives an excessive influx of bilirubin as with a hemolytic process. Free bilirubin accumulates and a sharp rise of the unconjugated fraction is reported on laboratory study. On the other hand, even normal quantities of bilirubin cannot be handled by a liver functionally impaired by hepatitis or biliary obstruction. Here, both unconjugated bilirubin and bilirubin glucuronide accumulate in the serum, free bilirubin rising because of impaired conjugation in the damaged cells and bilirubin glucuronide increasing by leakage from injured cells and ruptured bile ductules.

Recent advances have clarified the mechanism of some commonly used tests of liver disturbance. Unfortunately, all such tests are indirect measures of the multiple function of the liver. As such, they are seldom diagnostic of any specific lesion. A few tests have proven of particular value and have been outlined. Combinations of these measurements, repeated at intervals, may be of considerable assistance in the differential diagnosis and prognosis of the patient with jaundice.

Any test or group of tests do not replace classic clinical investigation by history and examination; they are additional only, and unfortunately are all too frequently of no great assistance.

The bilirubin glucuronide excreted by the liver enters the intestine where it is altered by the normal bacteria flora to urobilinogen. The urobilinogen thus formed inparts the normal brown color to the stool. Consequently, any factor that reduces the amount of urobilinogen formed leads to the passage of the characteristic clay-colored stool of hepatic disease. The most common causes are diminished bile flow due to functional impairment of liver bile production, *i.e.,* viral hepatitis and extrahepatic obstruction of the common duct, as in carcinoma of the pancreas. Simple observation of the stool color, therefore, is an excellent means of assessing liver function. More precise information may be gained by quantitative measurement of fecal urobilinogen. Levels of less than five milligrams per 24 hours are indicative of total extrahepatic bile duct obstruction. Conversely

Dr. Manning is an Associate in Medicine and Dr. Delp is Professor of Medicine at the University of Kansas Medical Center in Kansas City, Kansas.

TABLE I

DETECTION OF LIVER DISEASE

1. Bromsulphthalein excretion
2. Urine urobilinogen
3. Cephalin cholesterol flocculation
4. Transaminase
5. Serum bilirubin

increased excretion of bilirubin as occurs with hemolytic disorders leads to high levels of fecal urobilinogen, a most important finding in confirming the diagnosis of hemolytic phenomena and in the differential diagnosis of jaundice.

A small quantity of the urobilinogen formed in the intestine is absorbed and is subsequently excreted by both the liver and the kidney. The hepatic excretory mechanism is impaired early with liver injury, and, as a result, increased quantities of urobilinogen appear in the urine in patients with liver disorders. The simple test is a good one for screening patients for the presence of liver disease.

Two Notes Made

Two notes should be made with regard to the previous discussion: (1) broad spectrum antibiotic therapy reduces the value of urobilinogen determination since it reduces or alters the intestinal flora necessary for urobilinogen formation; (2) absent fecal urobilinogen combined with increased urine urobilinogen levels may paradoxically be found occasionally. This is usually associated with total bile duct obstruction and a cholangitis due to coliform organisms.

These tests relative to the total metabolism of bilirubin are, therefore, of value in detection of liver disease and in the differential diagnosis of jaundice. Measurement of serum bilirubin also has some advantage in prognosis of patients with liver disease. Persistent high levels of total serum bilirubin, particularly when associated with high levels of bilirubin glucuronide, are a sign of persistent hepatocellular injury. Chemical recovery is usually heralded biochemically by increasing quantities of urbilinogen in the stool and a later decrease in serum bilirubin towards normal.

TABLE II

DIFFERENTIAL DIAGNOSIS OF JAUNDICE

1. Alkaline phosphatase
2. Fecal urobilinogen
3. Transaminase
4. Serum bilirubin

Bromsulphthalein (BSP) Excretion. Of all the tests of liver metabolic activity, the measurement of bromsulphthalein excretion is probably the most sensitive and the single best test for detection of disturbed liver function. It is of little value in differential diagnosis. It is usually not performed in the presence of jaundice, since the factors which produce retention of bilirubin in turn produce bromsulphthalein retention in the serum.

Bromsulphthalein excretion is dependent on the amount of blood reaching from the liver cells and, as such, may be altered by factors which influence hepatic blood flow, such as congestive heart failure and shunting within and without the liver, as in portal hypertension. Recent research has produced considerable evidence that bromsulphthalein is conjugated with glutathione or derivatives of glutathione for excretion in a manner quite analagous to the conjugation of bilirubin with glucuronic acid.

TABLE III

DIFFERENTIAL DIAGNOSIS OF JAUNDICE

	FB	*BG*	*AP*	*FU*	*SGOT*
Viral Hepatitis	+++	++++	N+	N–	++++
Biliary Obstruction	+++	++	++++	–	+
Hemolytic Disease	++++	+	N	+++	N

FB = Free bilirubin
BG = Bilirubin glucuronide
AP = Alkaline Phosphatase
FU = Fecal urobilinogen
SGOT = Transaminase

Abnormalities of Protein Metabolism

Quantitative determination of serum albumin and globulin as well as *protein electrophoresis* are direct measurements which may accurately reveal protein disturbances frequently seen in liver disease. All turbidity and flocculation tests are really indirect assays of quantitative and qualitative protein abnormalities. They are not, therefore, diagnostic of liver disease, *per se.*

The *cephalin cholesterol flocculation* and *thymol turbidity* tests commonly used possess no distinct advantage over other similar reactions. They are commonly abnormal in primary parenchymal cell disease; less often in obstructive disorders. The CCF test is an adequate screening test for viral hepatitis. During the course of viral hepatitis the CCF usually returns to normal before the thymol turbidity.

Enzyme Measurements

Measurement of serum activity of various enzymes has been advanced considerably in recent years, but the

number of tests is far too lengthy to consider each individually and indeed no single test has proven of distinct diagnostic advantage over the others. For reasons of ease in performance and application in other disorders, measurement of *serum glutamic—oxalacetic transaminase (SGOT)* and *alkaline phosphatase (AP)* activity are presently the most useful, even though not the most specific for liver cell injury.

Serum glutamic—oxalacetic transaminase. Values of SGOT over 1,000 units are strong evidence of hepatic cell necrosis. Such levels are most commonly found in viral hepatitis during the acute phase, and a return of SGOT levels towards normal heralds clinical recovery. A secondary rise of SGOT activity frequently presages a relapse calling for further bed rest and supportive therapy. The test also has value in differential diagnosis, since serum activities are seldom increased over 500 units in patients with biliary obstruction. In interpreting any of these values, care must be taken to eliminate myocardial and skeletal damage as a cause of the elevation, since these tissues also contain considerable quantities of the enzyme.

Alkaline phosphatase. Measurement of alkaline phosphatase activity has stood the test of time and is of particular value in differential diagnosis of liver disease. Values over 8 mM units (method of Bessey-Lowry-Brock or 15 Bodansky units are quite uncommon except with biliary obstruction, either extrahepatic from stone tumour or stricture, or intrahepatic as from chlorpromazine. Rarely viral hepatitis produces an obstructive picture which can be extremely confusing *i.e.,* cholangiolitic hepatitis.

Elevation of serum alkaline phosphatase is frequently noted in focal lesions within the liver such as metastatic carcinoma or granulomatous infiltration *(i.e.,* sarcoid, tuberculosis, histoplasmosis). Indeed, the finding of high serum alkaline phosphatase activity in the absence of jaundice or other prominent signs of liver disease is strongly suggestive of metastatic disease of the liver, particularly if associated with increased levels of gamma globulin.

Miscellaneous Tests

Of the many other tests which have been used for assaying liver dysfunction, a few others are of use for specific points.

With respect to detecting liver cell injury, *serum iron* measurements are a proven value and should not be neglected. Values over 300 micrograms per cent, are very uncommon except in patients with viral hepatitis. Measurement of serum iron is of additional value in detecting the presence of hemachromatosis.

Persistent *prothrombin time* depression in the absence of bile duct obstruction is a sign of poor prognosis. The response of prothrombin activity to parenteral administration of vitamin K is occasionally of value in differential diagnosis. Lack of response indicates severe parenchymal cell dysfunction while a return to normal following vitamin K is usually seen with obstructive disorders.

TABLE IV

PROGNOSIS IN LIVER DISEASE

1. Serum bilirubin
2. Transaminase
3. Cholesterol
4. Cephalin cholesterol flocculation
5. Prothrombin time

Measurement of *total cholesterol* and *cholesterol esters* also have value in prognosis, since low levels of total cholesterol are frequently associated with a poor outcome. The per cent of cholesterol which is esterified is usually depressed in the presence of jaundice. However, marked depression of per cent cholesterol ester (<20 per cent) is sign of severe injury, particularly if associated with a serum bilirubin of less than five milligrams per cent. Also, high total cholesterol levels are uncommon in Laennec's or post-hepatitis cirrhosis, but are quite common in biliary cirrhosis.

Corrective Bowling

(Continued from page 128)

looks better than before, because you know how quick-tempered old Herb can be sometimes.

It's Not Without Some Hazards

One final word: expect your score to drop slightly as you change over to the scientific system of bowling, then to pick up by a similar amount as you perfect the technique. For example, you may drop down five points, then go over your former average by five points. One fellow I know has just started following one of my suggestions and already his score has dropped from 180 to 119. Think what a terrific score this man will have when *he* recovers double the lost points! I am bowling with a new league this season, by the way. Funny the way it happened. The other fellows thought for awhile that they wouldn't be able to make it on Monday nights, for various reasons, but after I had already joined a new team they found that they were going to be able to bowl together after all. Too bad they will have to find a replacement for me, but this new team is showing some serious errors in technique and I feel obligated to stay with them until I can straighten them out.

Psychiatry Today

The Influence of Current Psychiatric Trends On General Practice and the Community

MERRILL T. EATON, JR., M.D.; JOHN T. BRAUCHI, M.D.; *and* DONALD C. GREAVES, M.D., *Kansas City*

AMONG THE RECENT developments in psychiatry which are likely to have profound effects upon the roles of general practitioner and the community in the treatment in mental illness are: (1) the movement toward the care of psychotic patients on open rather than on closed or locked wards; (2) modifications in the relationship of psychiatry and the law; (3) improved understanding of the problems of the aged and aging; (4) the introduction of new medications; (5) improvement in psychotherapeutic techniques and methods of teaching psychotherapy; (6) expanded programs of post-graduate and residency education in psychiatry.

These developments and their probable consequences will be discussed on the basis of the authors' experience in the Department of Psychiatry at the University of Kansas Medical Center.

• The development of open ward care for psychotic patients, changing relationships between psychiatry and the law, new medications, and improved psychotherapeutic techniques will make possible the treatment of more psychiatric patients in their own communities.

• Community participation will include the establishment of psychiatric treatment facilities in general hospitals, the development of community mental hygiene clinics, and the development of other social agencies for the mentally ill and aged.

• General practitioners will be able to treat more psychiatric cases successfully and will give increasing attention to psychiatry and geriatrics.

• Efforts are being made to improve the teaching of psychiatry to medical students, specialists, and general practitioners and to relieve the shortage of psychiatrists.

Open Wards

The development of the open ward would appear at first thought to be a major interest only to the staffs of psychiatric hospitals and their patients. However, it is of more general significance. For many years a majority of the patients having the more serious psychiatric disorders were treated on locked wards with special custodial features such as detention screen on the windows and seclusion rooms. This contributed to a restrictive, unpleasant, and authoritarian environment. Unlocked or open wards were limited chiefly to a few wards for convalescent patients in the larger hospitals and to wards caring for minor psychiatric syndromes. In recent years T. P. Rees[8, 9] and others have rather conclusively demonstrated that most, if not all, psychiatric patients can be treated on open wards. Much of the early experience with the open ward was in large mental hospitals in this country and abroad. These hospitals differ from the psychiatric wards of general hospitals in that a number of patients are chronic; the turnover of patient population is slower; and, in addition, the location and grounds of many psychiatric hospitals offer both privacy and recreational facilities for patients. More recently it has been demonstrated that the open psychiatric ward is also practical in the general hospital.

The conversion of the psychiatric ward at the University of Kansas Medical Center to an open ward was reported by Dr. Kisik Kim and Dr. Merrill T. Eaton, Jr.[6] Since that time, as part of a planned expansion, bed capacity in the department has increased from thirty-three to forty-two. Open ward operation has continued to be satisfactory. For the general practitioner and the community the importance of the open ward lies not only in the fact that it is more pleasant for patients and their relatives, but that it has certain therapeutic advantages including improved cooperation and the psychological benefits that accompany the sense of dignity, responsibility, and self-esteem which a patient may have on an open ward.

From the Department of Psychiatry, University of Kansas School of Medicine, Kansas City, Kansas.

Dr. Greaves is Professor and Chairman of the Department of Psychiatry; Dr. Eaton is Associate Professor; and Dr. Brauchi is an Instructor.

One in Ten

Since at least one person in every ten is treated in a psychiatric hospital at some time in his life, and since nearly all of these patients are first seen by their family doctors, changes in treatment facilities become important to the practitioner. The open ward should make it easier for patients and their families to accept a recommendation for hospitalization when this proves necessary. Moreover, the practicality of the open ward simplifies the problem of the creation of facilities for the care of psychiatric patients in the general hospitals of the smaller communities. The creation of more psychiatric wards in general hospitals will give the practitioner a better opportunity to treat his own psychiatric patients and to keep in touch with those cases whom he refers to a specialist. Local facilities will keep the patients in better contact with their families, friends, employers, and the rest of the community. This can be expected to speed recovery and facilitate rehabilitation. Since locks, detention screens, and special windows and doors are no longer necessary, the creation of a psychiatric unit in a general hospital should not be much different and certainly no more complicated or costly than the addition of beds for any other type of patients. Seclusion rooms are not needed. At the University of Kansas Medical Center seclusion rooms have been converted to offices.

Since psychiatric patients may generally be up and dressed during the daytime, some living room space is desirable as is an area for occupational therapy and for recreation. Patients may eat in a dining room. This requires the construction of a special facility that in the long run should be more economical than serving from trays in the rooms. Dining room, living room, and recreational facilities may be shared by men and women patients and, in fact, this offers some advantage since it leads to patients giving more attention to grooming and deportment. Even if the minimum special construction and assignment of space recommended here is impractical, psychiatric patients can be treated on general medical and surgical wards.[1]

Psychiatry and the Law

There have been some recent changes in the relationship of psychiatry and the law. One of these is closely related to the development of the open ward. The locked ward, which in effect deprived the patient of certain personal liberties, often made it a medico-legal necessity to obtain commitment or court order before confining the patient. Even should the patient accept care on a locked ward on a voluntary basis, a formal written consent was usually necessary. The existence of the legal procedure of commitment or court order added to the physician's responsibilities and complicated the reaction of the patient. Implicit in commitment is the idea that the patient is irresponsible, although many quite sick psychiatric patients are capable of exercising responsibility. On an open ward the patient is not confined. He may leave, though, as in any other part of the hospital, efforts will be made to dissuade him from doing so if it seems unwise or harmful. Court order or commitment is rarely necessary and in its absence the physician can devote greater attention to his real responsibility, the treatment of illness, and less to functioning as a sort of guardian to the patient. This will simplify the creation and operation of psychiatric facilities in the general hospitals.

Another facet of the relationship between psychiatry and the law is the question of legal responsibility in crime. There is no reason to believe that crime is more frequent among the mentally ill than in any other population group. However, for some patients a crime can be the product of illness. Kansas statutes concerning criminal responsibility are based fundamentally upon the McNaghten rules formulated by the British House of Lords in 1843. Medical science and the understanding of mental illness has increased vastly since 1843, but the basis for the law has remained unchanged. The fundamental feature of the McNaghten rules is the question of the patient's ability to discriminate between right and wrong. Though some authors regard this as a relative concept, allowing for some leeway in interpretation,[4] it is quite possible for a practitioner, called upon as an expert witness, to be in the awkward position of knowing that a patient has a serious psychiatric illness and that the illness produced a crime, but having to testify that the patient is legally sane because he knew an act to be wrong and knew its consequences. The Durham decision in the District of Columbia courts points the way to a more reasonable approach to criminal responsibility. In essence, it does not raise the question of knowledge of right and wrong, but instead the question of whether the crime is the product of illness. It is probable that in coming years laws recognizing this test of criminal responsibility will be enacted in many of our states. When this becomes true, the practitioner may testify in a criminal case on medical grounds rather than on a legal technicality. This will, however, create one new problem in connection with the trend toward open wards in psychiatric hospitals since if a patient should be found not guilty by reason of insanity, it must then be determined whether he should be treated on an open ward, or whether he indeed requires custody in addition to treatment.

Old People Admitted

A large number of elderly patients are admitted to mental hospitals. It should be anticipated that this

number will be reduced in coming years. Senile psychotic reactions and brain syndromes associated with cerebral arteriosclerosis are not necessary comcomitants of aging. Improved general medical care of the aging patient and special attention to nutrition are among the prophylactic steps possible. Vitamin B_{12} deficiencies may play a part in some cases.[3] Special attention is now being paid to the role of hearing difficulties in the development of some psychiatric disorders in the aged patient. The advantage of continued constructive activity following retirement has been recognized and it is part of the function of the physician to assist his patient in making reasonable retirement plans. Continuation of an active social life into advanced years is also sound mental hygiene. Cooperation between physicians and social agencies may be helpful, both in assisting patients with retirement plans, and in assisting them to maintain an active social life. Psychotherapy is frequently indicated in both the adjustment reactions of late life and brain syndromes associated with senile brain disease or cerebral arteriosclerosis.[7] Its use should be considered even in cases in which there is evidence of considerable damage to the central nervous system and in which there are associated disorders of other systems.

New Medications

A number of new medications for use in psychiatric illnesses have been introduced in the past few years. Several of these have been studied intensively at the University of Kansas Medical Center, and at present a research project on anti-depressant medications is in progress. These new preparations, most of which are sedatives (tranquilizers) or stimulants (energizers), are not specific for particular syndromes nor are they curative, but instead are symptomatic. Their proper use, however, permits many more patients to be treated as out-patients than could previously be managed without hospital care, makes some out-patients and in-patients more approachable, and is adjunctive to the over-all psychotherapeutic program.[5] Since a large number of pharmaceutical houses have entered this field, the practitioner must learn about a vast number of new drugs. It is important to base the prescription of these drugs upon clinical findings, rather than the patient's unsupported description of his symptom. Some patients will describe themselves as experiencing anxiety, when actually they are having some other unpleasant affective state; others may describe "depression" that actually shows to be loneliness or boredom. The tranquilizers are most useful when objective evidences of anxiety, tension, or agitation are present. Likewise it is important to observe objective evidences of depression before prescribing the energizers. Nearly all of these products have numerous side effects, some of which are serious, and it is important to be aware of them.[2] Patients receiving these new medications should be followed closely, not only because of the possibility of side effects, but also because of the risk that the symptomatic medication will conceal symptoms and mask a dangerous progress of illness.

These drugs are already widely used in general practice and since they add to the number of patients who may be treated as out-patients, they increase the number of psychiatric cases who can be treated by general practitioners in their own communities.

Psychotherapy First Choice

Psychotherapeutic interviews remain the treatment of choice for a majority of the psychoneurotic and psychotic reactions. Many effective techniques of psychotherapy are long term and accordingly expensive, but a constant effort is being made to develop and improve techniques of brief psychotherapy. The teaching of psychotherapeutic technique has long been a difficult problem. Like all techniques, this must be learned by demonstration and by performing therapy under supervision. Effective instruction in psychotherapy must include continuous supervision of some cases from the first interview until the completion of therapy; it cannot be based on single interviews or short series of appointments alone. For many patients it would be quite impractical to expect long and intensive discussion of personal problems with an audience of medical students or physicians in the room. Demonstration or supervision based upon notes taken in a private interview invites some inaccuracy and distortion. If tape recordings are used, facial expression and gestures cannot be conveyed. However, patients who would be made uncomfortable and unable to discuss their problems readily with an audience in the room, are able to do this before a one-way vision mirror or a television camera even though they are aware that there is an unseen audience. At the present time closed circuit television is being used as a means of instructing resident physicians in psychotherapeutic technique at the Medical Center. Though television has been used to demonstrate psychopathology and diagnostic problems to the undergraduate medical student, it has not yet been used to teach therapeutic technique below the resident level. However, a project for this is under active consideration and will be instituted at the University of Kansas Medical Center when funds and equipment are available. It is only one step from this to the application of this teaching method in post-graduate instruction.

Psychiatric Disorders High

The incidence of psychiatric disorder is high. The supply of psychiatrists is low and these are concen-

(Continued on page 141)

Oral Hypoglycemic Agents

Clinical Experience With 50 Diabetic Patients

ROBERT E. BOLINGER, M.D.; WU-HAO TU, M.D.; ***and***
CHARLES KENDALL, M.D., ***Kansas City***

Experiences with management of 50 diabetic patients with oral hypoglycemic agents is reported. A good response was obtained in about half of the patients treated with the sulfonylureas and failure occurred in about one-fifth of the cases tried. The incidence of successes increased after age 45 and in patients taking less than 20 units of insulin. Several incidences of refractoriness to one of the sulfa drugs and responsiveness to another were noted. DBI had the additional advantage over the sulfonylureas in being effective in combination with insulin in young, "brittle" diabetics.

Reactions to be guarded against with the sulfonylurea drugs are hypoglycemia and ketosis in refractory patients.

Experience in the diabetic clinic with the use of the oral hypoglycemic agents in 50 patients is reported in this paper. The patients were followed on an out-patient basis with periodic determination of the fasting blood sugar and a urine glucose. The severity of the diabetes among the patients was graded as follows:

Severe	7
Moderate	18
Mild	25

What Drugs Are Available for Oral Hypoglycemic Therapy

The drugs which have proven hypoglycemic activity fall into two groups: first the **sulfonylureas,** which in this series include tolbutamide,* chlorpropamide,** and metahexamide; and second, the **diguanides,** the only representative of which is used here is phenformin (DBI).

The sulfonylureas are handled by the body in much the same manner as the sulfa drugs used clinically for their antibiotic activity. These drugs are absorbed rapidly from the gastrointestinal tract and excreted slowly after conjugation and alteration in the body, such that measurable blood levels are present for several hours after a single dose. The sulfa drugs differ from one another mainly in their rate of excretion such that the time for half of the drug to disappear from the blood is as follows *(Figure 1)*:

	Hours
Tolbutamide	4.7
Chlorpropamide	35
Metahexamide	26

These drugs produce an immediate hypoglycemia, the degree of which depends on the blood level of the drug and on the particular drug used.[2, 3] As measured by the blood level of the drug necessary to produce hypoglycemia, metahexamide has been rated from two to seven times as potent as tolbutamide.[2-4]

The handling of DBI in the body is not thoroughly understood. It does not produce consistent blood levels and as far as is known does not accumulate in the body as do the sulfa drugs. A part of it is excreted into the gastric juice.[5]

The sulfa drugs by virtue of the fact that they maintain blood levels for long periods of time can

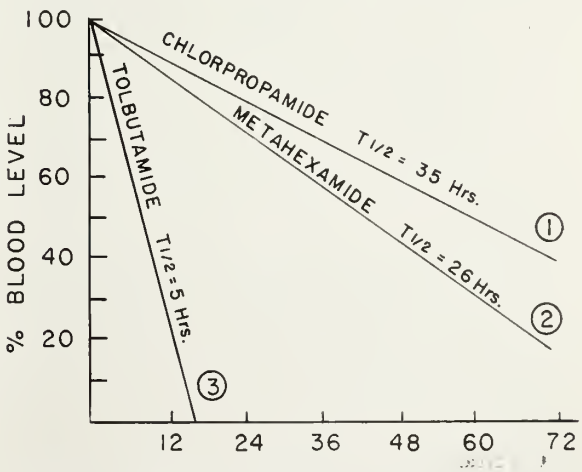

Figure 1. Rate of disappearance of sulfonylureas from the blood. (Compiled from the literature.)

From the Department of Medicine, University of Kansas School of Medicine, Kansas City, Kansas. Supported by Grant-in-aid, U.S.P.H.S. Dr. Wu-Hao Tu is an U.S.P.H.S. Trainee in Metabolism.

* Trade name Orinase.

** Trade name Diabenese.

TABLE 1

COMPARISON OF DIET ALONE AND INSULIN TO ORAL HYPOGLYCEMIA THERAPY AS SHOWN BY THE FASTING BLOOD SUGAR

Diet Alone	*Tolbutamide*	*Chlorpropamide*	*Metahexamide*	*DBI*
Change—mg. per cent	-80.5	-85.0	-83.7	
Superior—No. cases	12	11	13	
Same—No. cases . . .	0	1	0	
Inferior—No. cases .	1	1	0	
Insulin				
Change—mg. per cent	+10.9	-16.3	- 6.4	-19.7
Superior—No. cases	8	7	7	8(5)*
Same—No. cases . . .	0	1	0	0(2)
Inferior—No. cases .	5	5	5	2(1)

* Figures in parenthesis represent combined DBI and insulin therapy.

produce hypoglycemia in either normal or diabetic individuals. DBI, on the other hand does not produce hypoglycemia in normal individuals but only lowers an abnormally elevated blood sugar.[6]

What Dosage Schedules Should Be Followed

In the case of the sulfa drugs the dosage schedule should include a loading dose which is given to attain an effective blood level and then a daily maintenance dose. Dunlap *et al* have recommended that the maintenance dose be given twice daily in the case of tolbutamide so that nocturnal hyperglycemia will be avoided. A single dose each day is probably adequate for the other drugs. The doses used in this series were as follows:

Drug	*Loading (gm.)*	*Maintenance (gm.)*
Tolbutamide . .	5.0	1.0 -1.5
Chlorpropamide	0.750	0.250
Metahexamide .	0.300	0.050-0.100

For patients who are already on insulin, the insulin may be omitted and the loading dose started the same day.

The approach to treatment with DBI is different since there is no delay in excretion. For patients who are not on insulin in this series the DBI was started as one tablet (.025 gm.) three times per day. This was increased until an effect was noted or until toxic symptoms appeared. For patients who were already on insulin, the drugs were started at 25 mg. per day and increased by 25 mg. until an effect was noted. Whenever evidence of hypoglycemia was noted, then the dose of insulin was decreased. This increase in DBI and decrease in insulin was continued until the minimum dose of insulin could be given. Although the DBI itself will not produce hypoglycemia, the combination with insulin may do so.

What Is to Be Expected in the Patients

In Table 1 are shown the average responses of the fasting blood sugar in patients for each of the sulfa drugs compared to the fasting levels no drug or insulin therapy. There can be no doubt that these compounds justify the name of hypoglycemic drugs. The criteria for a clinical response must include more than just a drop in the blood sugar alone and must take into consideration the amount of glycosuria as well as the ultimate nutrition of the patient. These other factors are included in the overall terms of good, fair, and poor clinical response used here.

Extensive trials in other clinics have reported that 40 to 60 per cent of the patients treated with tolbutamide have shown a satisfactory response.[8-10] This is difficult to evaluate, however, since as shown in Table 2, the response depends on the severity of the diabetes. In this series about half of the mild and moderately severe cases showed a good response and another one-third showed a fair response. In no case classed as severe was there a good or fair response to drug therapy alone. Wildberger and Ricketts, caution, however, that many of the cases are reported in such a way that it is not possible to evaluate the success of the treatment. They reported five carefully selected and controlled patients and by good criteria of treatment found only two of them controlled adequately by tolbutamide.

No striking differences were noted between the different sulfa drugs as regards their clinical effect; although, tolbutamide showed the greatest number of clinical failures and chlorpropamide showed the greatest number of successes with metahexamide in-

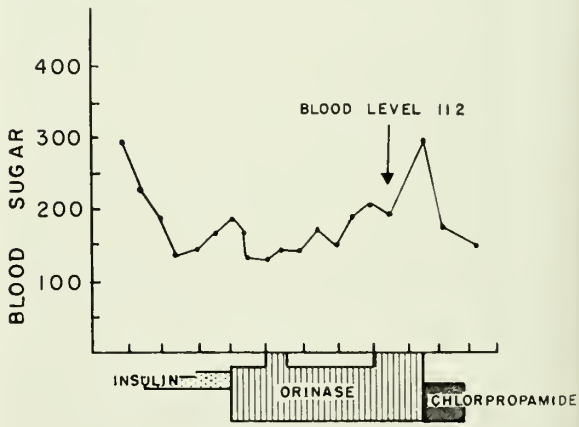

Figure 2. Response of diabetic patient to tolbutamide with secondary failure and then response to chlorpropamide.

termediate between them. It is difficult to compare DBI because of the different circumstances under which it was used.

In 26 Cases

In 26 cases more than one drug was used so that it was possible to compare the results in the same patient. In general there was not much difference between the sulfa drugs such that when one of these was ineffective, the others were also. Some exceptions did appear, however, where chlorpropamide and metahexamide were effective while tolbutamide was not. In four instances there was an initial response to tolbutamide followed by a gradually developing refractoriness, but two of these patients were responsive then to chlorpropamide *(Figure 2)*. One patient was initially responsive to chlorpropamide and finally became unresponsive to this and the other drugs. This secondary failure of the drug appearing after an initial success, is noted usually from six to 12 months after treatment has been started. Several possibilities exist as explanations for this secondary failure among which is the ultimate exhaustion of the beta cells of the pancreas due to excessive stimulation.[12] Evidence against this is the fact that subsequent resumption of insulin dosage shows no increase in the requirement. Another possibility is that there is a decreasing blood level of the drug due to changes in absorption, or more likely in the case of tolbutamide, in the timing of the drug.[7] When such a situation appears the loading dose should be repeated and if no response occurs then treatment with one of the other types of hypoglycemic agent should be tried. The possibility of intercurrent illness should also be entertained since most responsive patients become unresponsive when stress of another type appears in the form of an infection, a fracture, or surgical procedure.

TABLE 2

Degree of Control	*Tolbutamide*	*Chlorpropamide*	*Metahexamide*	*DBI*
Good	10(43)	10(56)	12(53)	5(25)
Severe ..	0(0)	0(0)	0(0)	1(5)*
Moderate	4(16)	4(24)	4(16)	1(5)
Mild ...	6(24)	6(33)	8(32)	3(15)
Obese ..	3	4	7	2
Fair	8(35)	6(33)	7(30)	7(35)
Severe ..	0(0)	0(0)	0(0)	1(5)*
Moderate	2(11)	2(11)	1(3)	3(15)
Mild ...	6(24)	4(22)	6(24)	3(15)
Obese ..	6	4	4	4
Poor	5(22)	2(11)	4(17)	8(40)
Severe ..	2(11)	1(5)	0(0)	3(15)*
Moderate	1(3)	0(0)	2(11)	3(15)
Mild ...	2(11)	1(5)	3(14)	2(10)
Obese ..	2	1	3	5

* In combination with insulin.

TABLE 3

EFFECT OF DURATION OF DIABETES ON RESPONSE TO TREATMENT (AVERAGE YEARS)

	Tolbutamide	*Chlorpropamide*	*Metahexamide*	*DBI*
Good ...	6.1	8.3	6.5	4.8
Fair	3.8	7.0	6.8	7.5
Poor	9.6	2.0	8.6	10.2

Mirsky *et al* reported that early onset of diabetes and long duration of the disease attenuated the successful results with these drugs. In this series, it can be seen *(Table 3)* that the duration of the diabetes was not a very important factor in determining the response to the sulfa drugs, while with DBI a long duration for the disease definitely decreased the chances for a good result. One case here had had diabetes for 25 years, requiring insulin, but had a good response to chlorpropamide.

In Table 3 are seen the successes and failures according to the age of the patient where it is noted that the greatest number of successes appeared in patients over 45 and the greatest number of failures under this age, although there are a significant number of exceptions both ways such that age itself should not be considered a categorical contra-indication to treatment.

Patients who showed a tendency to ketosis were uniformly resistant to the sulfa drugs.[10]

One would hope that the hypoglycemic drugs would offer some unique help in certain problem types of diabetics. One such type of patient is the obese diabetic who has always evaded our efforts at good control with insulin by simply gaining more weight and requiring increasing doses of insulin to maintain control. Reference to Table 2 however shows a random sprinkling of obese persons in each category with a sizable number of obese persons in the poor response group. If drug therapy offers any advantage in this group of patients it is that the drugs do not stimulate the appetite to the same extent as insulin, however, weight loss under drug therapy did not occur to a significant degree. It is suggested that early initial control of some of these patients may be due simply to the fact that they stick to a diet more consistently in order to "prove" to the doctor that the tablet is effective. In all of these cases, however, when eating is resumed and the

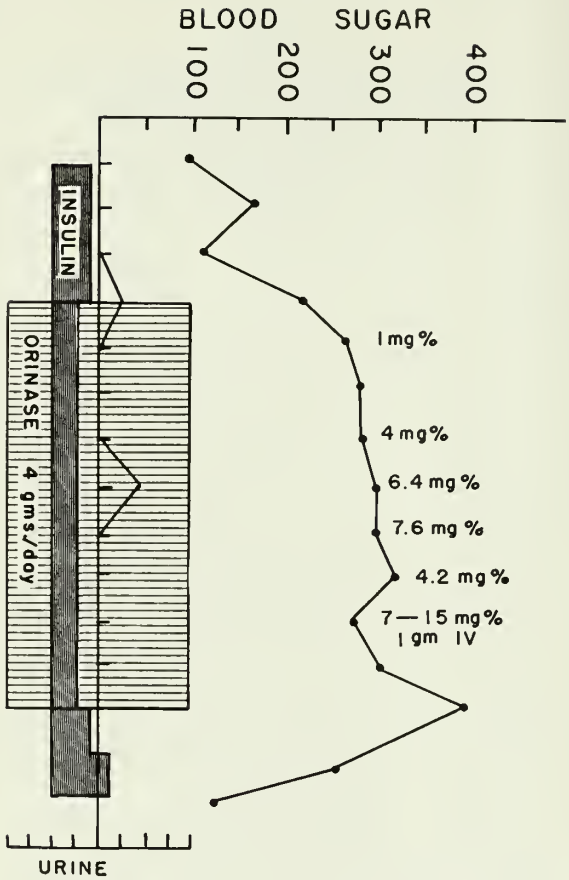

Figure 3. Response showing failure to combination of insulin plus tolbutamide.

weight increases, then lack of control by the drug appears.[9] These drugs then are no substitute to proper dieting in the obese diabetic.

What Relation Do These Drugs Have To Insulin Therapy

Combinations of sulfa drugs with insulin have been recommended as a means of reducing insulin dosage and attaining some stabilization.[14] In our experience one of two effects can be expected from the combination, namely that the sensitivity of the patient to insulin increases such that he becomes more brittle, or there is no effect at all *(Figure 3)*. In three cases in this series violent insulin reactions occurred when the drug was combined with insulin, even though the patients were refractory to the sulfa drug alone.

There is much more to be said for combinations of insulin with DBI,[15] probably because of the lesser tendency of the latter to produce hypoglycemia. Two medicines instead of one for a patient only increase his expense and complicate his care, so when a combination of insulin with DBI is to be used there should be good reason for this. The prime indication for adding DBI to insulin therapy is then the brittle diabetic who cannot be controlled on insulin alone without alternating insulin reactions and ketosis. In this series, the combination has been used in eight cases with the following responses:

Poor	6
Fair	1
Good	1

Both of the successful responses were in labile young diabetics with poor regulation in the face of high insulin doses *(Figure 4)*. In one of these patients the glycosuria was reduced from 300 grams per day to 50 grams per day on the same dose of insulin. Juvenile type diabetics tend to show extreme lability or brittleness at two times in their life: first, during the growth period, and secondly, ten to 20 years later when they begin to develop the late renal complications of diabetes. It is in the first group that the combination of insulin and DBI has been most effective in our hands while all of the failure occurred in the latter group. Baldwin states that children who have hyperglycemia during the day are particularly good candidates for the combination therapy. Although, the insulin dosage may be reduced by this combination, the juvenile diabetic still sustains the same susceptibility to acidosis and if this combination intervenes then full dependence must be placed on insulin alone for its correction. None of the hypoglycemic drugs have any place in the treatment of diabetic ketosis and acidosis.

A comparison of the effectiveness of drug therapy as compared with insulin as measured by the average fasting blood sugar levels is shown in Table 1. As can be seen, in the case of the sulfa drugs, the cases are about evenly split between a superiority of the

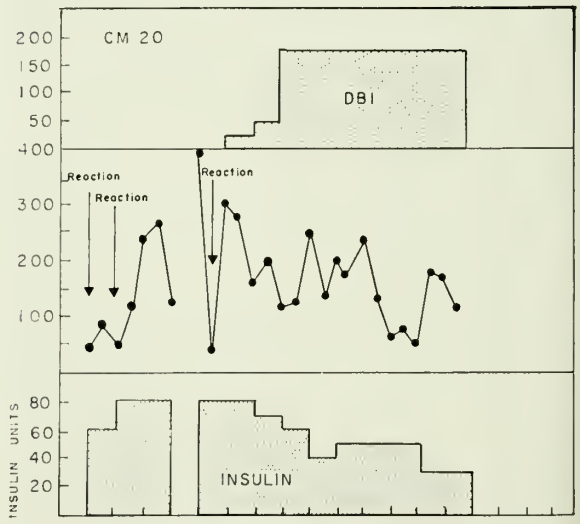

Figure 4. Combination of insulin plus DBI showing "leveling" effect of DBI with disappearance of insulin reactions and reduced insulin dosage.

drug over insulin and an inferiority of the drug to insulin management.

Consistent with the findings of others[17] in all patients taking over 20 units of insulin per day, except for two (one taking 30, one taking 40 units) treatment with sulfa drugs was a failure.

What Untoward Effects May Be Expected

The sulfa drugs may have toxic reactions involving the bone marrow, liver, and skin. In this series no toxic reactions were encountered with tolbutamide. One case developed a severe exfoliative dermatitis while on treatment with chlorpropamide. No clinical toxicity was noted with metahexamide but laboratory studies showed abnormal thymol turbidity and cephalin flocculation tests in five cases and a reduced platelet and neutrophil count in one case. These were all self limited when the drug was stopped.

Hypoglycemic reactions may occur either with or without insulin after administration of the sulfas.[34, 35] In this series there were two patients showing severe hypoglycemia and one showing a mild hypoglycemia after tolbutamide alone. These hypoglycemias were characterized by the fact that they lasted several days and one of these cases developed a permanent encephalopathy. Both of the cases showed impaired renal function before treatment so this should be an indication for particular caution against this complication *(Figure 5)*. Hypoglycemia may also occur in patients apparently refractory to the sulfa drug at the time that insulin therapy is resumed after a drug failure. When such a hypoglycemia appears, intravenous glucose should be maintained for several days.

No serious toxic reactions were noted with DBI. The main difficulty in the use of this drug is nausea which appeared in one of our cases at 25 mg. per day, but usually does not become evident until doses of over 100 mg. per day are used. About 40 per cent of the patients will show nausea above this dose and all will show it if the dose is raised high enough. When nausea appears it usually persists until the dose is reduced.

TABLE 4

EFFECT OF AGE ON RESPONSE TO TREATMENT*

Success	*Tolbutamide*	*Chlorpropamide*	*Metahexamide*	*DBI*
Over 45 .	15(23)	16(25)	15(23)	8(12)
Under 45	3(15)	2(10)	2(10)	4(20)
Failure				
Over 45 .	3(4)	1(2)	2(3)	5(8)
Under 45	2(10)	1(5)	1(5)	5(25)

* Figures indicate number of patients while figures in parenthesis indicate the per cent of the particular age group represented.

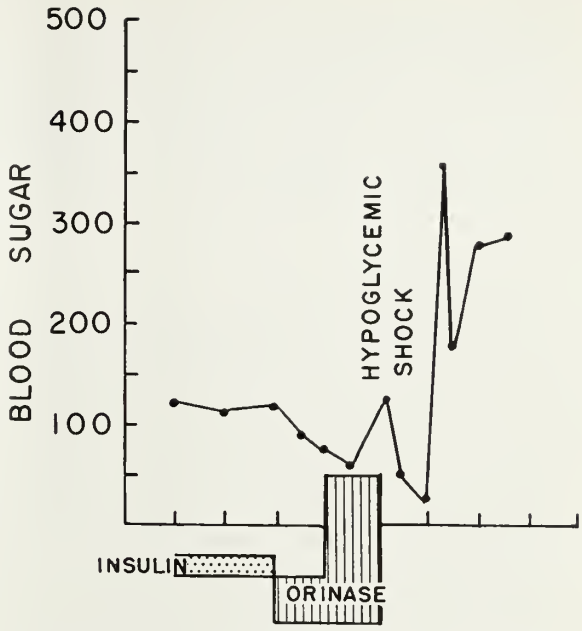

Figure 5. Severe hypoglycemic response to tolbutamide lasting three days.

What Laboratory Controls Are Needed

The laboratory controls which may be considered, fall into three groups: those necessary for following the diabetes, those necessary for detecting toxicity, and those necessary for following the level of the drug in the body. In the first category with sulfa drug treatment the status of the diabetes must be followed quite closely early, since the two great dangers, namely, hypoglycemia or, more commonly, lack of response with the development of acidosis, must be detected early. In this series patients were instructed in the use of urine testing for both acetone and sugar, and were told that if acetone appeared they were to contact the physician immediately and usually the treatment was stopped and insulin reinstituted. As mentioned above even an unresponsive patient may develop serious hypoglycemia when insulin is reinstituted so the patient is instructed to start back on half the former dose and increase each day back to the original dose at four days. A certain amount of glycosuria can be tolerated during the change over period. Toxicity determinations *i.e.*, blood counts and liver function tests are not rigorously indicated with tolbutamide but should probably be checked occasionally with chlorpropamide and certainly with metahexamide.

Methods for following the blood level of the drug are available but not readily adaptable to hospital

laboratories. Measurements of the blood level are usually not indicated in the routine cases. Effective blood levels for tolbutamide and chlorpropamide are between 8 and 20 mg. per cent while for metahexamide the level is between 1-3 mg. per cent. With DBI no particular control other than control of the diabetes is indicated in the routine case.

How Do the Drugs Work

A great wealth of conflicting experimental work exists directed towards a solution of this problem. The early ideas that there is a change produced by the sulfonylureas in the alpha cells of the pancreas has not been substantiated. The sulfa drugs decreased the beta granules in the islets under acute conditions but in chronic administration no changes were noted.[18-20] For the sulfa drugs to be effective as hypoglycemic agents, most of the evidence indicates that pancreatic insulin production must be present and it is in diabetics of the type where Wrenshall and Best[21] found extractable insulin in the pancreas and Goren *et al*[22] found insulin in the plasma, that these drugs are effective.

Tolbutamide, under some circumstances, causes a maximal effect when it is injected into the pancreatic artery. Evidence against the theory, however, that the hypoglycemic effect is due to the insulin secreted under this stimulation is that insulin alone causes a rise in the blood pyruvate while tolbutamide causes a fall.[23, 24] Some workers have thought that this difference could be explained on the basis of route of administration but Galansino *et al*[24] could find no difference on this basis. Much evidence exists to the effect that the sulfa drugs may lower the blood sugar by decreasing hepatic glucose production.[25-29] There is no evidence that the sulfa drugs have any effect on the peripheral tissues. Mirsky[30] has shown that the sulfa drugs are "insulinase" inhibitors *in vitro*. Bolinger and Grady[31] showed that the disappearance of labeled insulin from the plasma was accelerated after tolbutamide.

The site of action of DBI is different from that of the sulfas in that there is a demonstrable effect on the peripheral tissues. Clarke and Forbath[32] and Bolinger *et al*[33, 34] demonstrated that DBI increases the glucose uptake of the rat diaphragm. This differs from the similar effect of insulin on this tissue in that the tissue glycogen and potassium are depleted by DBI. Groen *et al*[35] demonstrated that insulin effect on skeletal muscle is easily blocked by small amounts of adrenalin and Bolinger *et al* [33] have shown that DBI effect is not nearly so sensitive to this block. Some of the clinical benefit of DBI may conceivably be due to this partial blocking of adrenalin effects on the peripheral tissues.

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Psychiatry Today

(Continued from page 134)

trated in urban areas. Attention has previously been called to the probability that more psychiatric wards will be created in general hospitals and the fact that new medications make it practical to treat more patients on an out-patient basis. Accordingly, it should be reasonable to assume that the general practitioner will be treating more psychiatric cases and that the efforts now in progress to attract psychiatrists to the smaller communities will be increased. Private psychiatric practice in the smaller communities should be more practical than it has been in the past. It may be possible in some communities to combine private practice with part-time service in a community clinic for lower income patients. Most community clinics use a team approach and bring with them the skills of the psychologist and the social worker, as well as the physician. Because of the shortage of psychiatrists, efforts have been made to expand many residency training programs. At the present time at the University of Kansas Medical Center there are six residents in psychiatry and it is expected soon to increase the number to twelve.

At the national level one step has been taken to add to the supply of psychiatrists. The Public Health Service has established a system of grants for psychiatric training for general practitioners who wish to specialize in this field. These provide adequate stipends to support a person several years out of school. The physician interested in such a program must first be accepted by an approved training center which then applies for the grant. For the general practitioner who wishes to increase his skill in psychiatric techniques but who does not wish to specialize in psychiatry, we must anticipate further expansion of post-graduate programs.

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More Examinations Helpful

Periodic examinations rank as an increasingly important contribution to occupational health, according to the current issue of *Patterns of Disease,* prepared by Parke, Davis & Company for the medical profession.

Their role is underscored by the fact that in spite of variations in examinations, at least 15 per cent and as many as 40 per cent of persons examined are found to have a significant disease or defect previously unknown. Moreover, half or more of these conditions are asymptomatic when discovered.

Recommended tests include: complete blood cell count with hematocrit, erythrocyte sedimentation rate, urinalysis, serology, stool examination for parasites and occult blood, chest x-ray, and electrocardiogram.

Proctosigmoidoscopic examination should probably be included in usual examination procedures and, for women, pelvic examination, and cervical smear study is recommended.

Renal Angiography

Records Information About the Renal Arterial System

COLVIN H. AGNEW, M.D., ***Kansas City***

RENAL ANGIOGRAPHY FURNISHES precise information about the renal arterial system. It may be performed by direct puncture (usually accidental) and by catheter technique (usually deliberate). In the early 1950's several investigators employed polyethylene or cardiac catheters (Helmsworth, *et al,* Bierman and associates, Pierce, Goodwin, Hooks, and others). This method never received widespread American acceptance, but the availability of radiopaque polyethylene catheters has revived interest in the method.

Translumbar aortography has been used extensively in the investigation of renal vessels; however, there is some disagreement (Evans and Nesbitt) as to its value. Nesbitt emphasizes the need for careful selection of patients with hypertension for angiography. Gregg believes that selective angiography is the best approach to renal arteriography. Intravenous techniques have been used for 20 years to visualize renal arteries (Robb and Sternberg). Recent refinements in this technique includes the employment of radioactive I-131 tracers (Porporis and others) to time exposure, and bilateral venous injections. This method has the advantage of being somewhat less hazardous; however many of these aortograms lack renal detail.

Method

Seldinger's technique for percutaneous catheter insertion has been given careful consideration; however, I favor exposure of the artery as developed by Derrick and associates, because it permits control of hemorrhage, even though it is more time consuming. The time saved may not be to the patient's advantage if it is at the expense of local complications. The fasting, premedicated patient is placed upon a radiolucent mattress. (General anesthesia is recommended for children.) Under local anesthesia the femoral artery is exposed. The adventitia is stripped, umbilical tapes are looped above and below the site for the insertion of the catheter. The distal femoral artery is injected with 5 ml. of 0.02 per cent solution of heparin. Some favor heparinization of the patient. A short transverse incision is made in the artery and the radiopaque polyethylene catheter (KIFA) with the proper shape is inserted into the femoral artery. A stainless steel stylet almost straightens the catheter before its insertion. The catheter is advanced to the approximate level of the renal arteries, the stylet removed, and fluoroscopy is employed for final positioning, 6 ml. of Renografin 60 per cent or Hypaque 50 per cent contrast material is entirely adequate for complete visualization. Serial filming is desirable. Image amplification may be extremely useful. Until now our experience has been acquired with the usual fluoroscopic equipment. It is our intention to record the information by cine-technique in the future.

Hypertension is curable by corrective arterial surgery or nephrectomy in selected patients. Renal angiography offers a method of selecting the proper treatment and precisely locating the lesion. The method, results, advantages, and disadvantages are summarized.

Two Advantages

The radiopaque catheter has two significant advantages: (1) it may be easily seen and (2) a tip may be moulded for the specific application. To direct the tip toward the ipsilateral artery there must be a gradual curve in the body of the catheter. To enter the contralateral artery the body of the catheter must have an S-shaped bend. It is usually easy to distinguish entry in a renal artery from entry in a lumbar artery. For injection, however, the tip should not be in the renal artery but only at the orifice, thus avoiding unnecessary renal artery spasm. It is conceivable that the catheter might pass an atheromatous plaque and the arteriogram would then show no abnormality. Our experience has largely been with a single end-hole catheter. It is entirely possible however, that some arrangement of punched side-holes and an open end-hole will be superior, and that is now under investigation.

Results

The most striking feature of this method has been the excellent anatomic detail. It has been surprisingly

From the Department of Radiology, University of Kansas Medical Center, Kansas City, Kansas.

The cooperation of R. N. Cooley, M.D., and J. R. Derrick, M.D., University of Texas Medical Branch, Galveston, Texas, is gratefully acknowledged.

easy to place a catheter in either renal artery if the catheter has had the proper bend. We have previously published the appearance of a narrow stenotic band with a post-stenotic dilatation demonstrated by translumbar aortography and proved to be a congenital stenosis.[1] The patient had a vascular repair with a temporary relief of hypertension. With the recurrence of hypertension an aortogram demonstrated that the end-to-end anastomosis was of insufficient caliber and a nephrectomy was done with relief of the hypertension. In the same article we published an arteriogram of the vascular pattern in a man with essential hypertension showing a normal caliber renal artery, although somewhat scalloped, and the absence of interlobular branches. The patient died of a fulminating essential hypertension about three months later. Our third case was a child with hypertension who had an unsuccessful lumbar aortogram approximately nine months earlier followed by a successful selective catheterization bilaterally *(Figure 1-C)*. The boy's left arteriogram was distinctly normal. On the right there was a stenotic area with a poststenotic dilatation at the origin of the major branch to the right upper pole. The hypertension has apparently been cured by resection and end-to-end anastomosis. A second child was investigated by this method and no renal artery was demonstrated on the left. Two patients had their celiac axis investigated, and during this procedure renal angiograms were also made. These normotensive patients demonstrated good filling of the interlobular arteries and uniformity of the caliber of the major vessels. These cases have been investigated at the University of Texas Medical Branch, Galveston. An additional child with hypertension has been investigated here. A preliminary film demonstrated calcification in the region of the left renal artery. Several attempts to insert a catheter failed, and no dye was seen entering the renal artery. It should be mentioned that the pyelogram showed good renal function; however, as pointed out by Squire the excretory pyelogram is not a sensitive reflector of kidney function.

Discussion

While there have been some notable successes in the relief of hypertension following surgery, overenthusiasm may have resulted in improper selection of patients.[2] Advances in surgery through the use of vascular prostheses has widened the scope of surgical attack and refocused attention upon the role of renal ischemia in the production of hypertension. Morris and associates before the Southern Society for Clinical Research recently reported on the experiences in 30 patients with hypertension subjected to this treatment. Twenty-eight were essentially relieved of their hypertension. Defective blood supply due to atherosclerotic plaques, congenital stenosis, aberrant arteries, and renal artery aneurysms have been demonstrated to be a cause of hypertension in humans. It might be worthwhile to review the renal ischemia hypothesis in the production of renal hypertension. The kidney produces a substance (renin) which combines with the plasma globulin (hypertensinogen) to produce a substance (angiotonin) which will

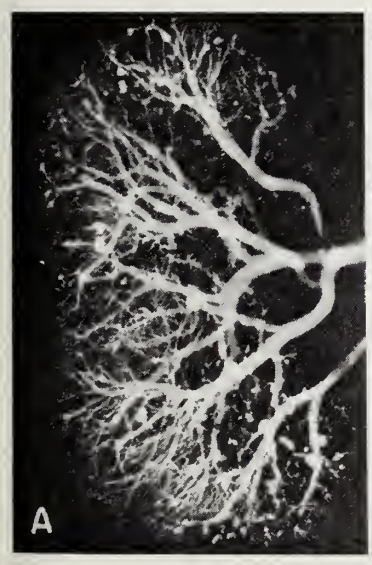

Figure 1-A. Angiogram from a patient with polyarteritis nodosum. This was obtained at autopsy by Meaney and associates (reproduced through the courtesy of *Cleveland Clinic Quarterly)*, and shows not only the fine detail possible but the microaneurysms seen in this disease.

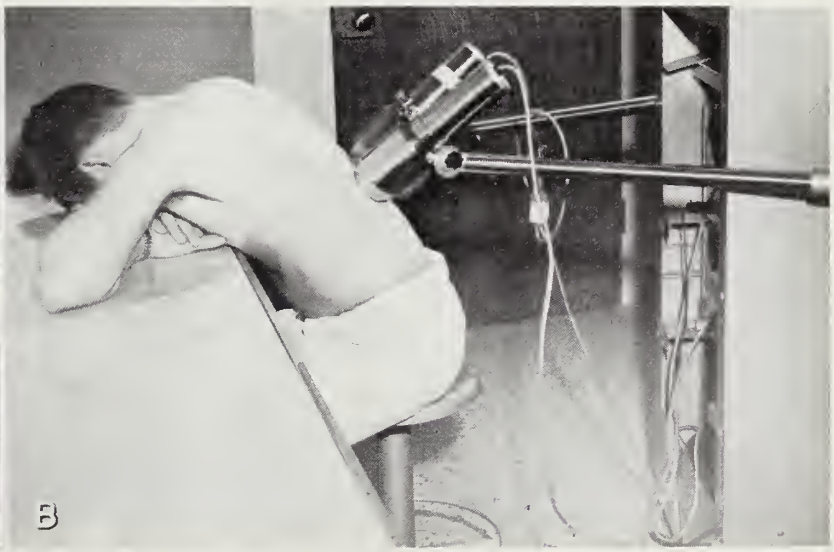

Figure 1-B. The patient in a flexed sitting position with the narrow beam collimator probes almost touching the skin. In practice, the probes are inclined sharply downward. This position must be maintained about 15 minutes for a differential renal study.

elevate blood pressure. Huggins has shown that there is also extrarenal formation of vasopressor substances. It appears that if surgery is undertaken within a reasonable period (perhaps three years) after the onset of hypertension, success may follow. On the other hand if the hypertension becomes fixed, there is not a sustained relief from hypertension in spite of the corrective operative procedure. Angiograms of kidneys from hypertensive patients show a distinctive radiographic appearance—sparse or absent filling of the interlobular arteries (Meaney, *et al*). Differential renal clearance tests play an important role in the investigation of hypertension.[16] We are just beginning to employ external counting of radioactive Diodrast I-131 *(Figure 1-B)*. Distinctive tracings have been found in normally and abnormally functioning kidneys.[7] We anticipate that it will augment preangiographic work-up.

Application

1. Renal Tumors: While the distinction between renal cyst and neoplasm can usually be made by angiography, surgery will be resorted to regardless of the angiograms in the majority of cases. It is not, therefore, recommended unless it will be decisive in the management.

2. Renal Tuberculosis: I have no personal experience. European authors (Frimann-Dahl and Gregg and associates) have found it of value since segmental nephrectomy has a role in the surgical management.

3. Miscellaneous Conditions: (a) Hydronephrosis, (b) polycystic disease, (c) hypoplastic kidney, (d) renal infarcts, and (e) horseshoe kidney are susceptible to diagnosis based upon their sufficiently characteristic vascular pattern. These conditions may be confirmed by simpler procedures.

4. Hypertension: It would appear that angiography of the kidneys has its principal value in the investigation of hypertension. Poutasse advocates that hypertensive patients, regardless of age or duration of disease, who show a disparity in size by intravenous pyelography should be studied by angiography. Unexplained hypertension in childhood should be studied by angiography. In older persons an accelerated development of hypertension may justify renal angiography. Judicious employment of the method will reduce the number of unnecessary procedures.

Comment

The advantages of selective renal angiography may be summarized as follows:

1. Precise demonstration of the renal artery and kidney. **2.** Minimal visualization of irrelevant areas. **3.** Eliminate intramural injection of contrast substance. **4.** Reduce the amount of contrast substance. **5.** Permits unrestricted positioning of the patient. **6.** Reduces the requirement for analgesia.

The disadvantages may be summarized as follows: **1.** Requires more time. **2.** May not be successful in tortuous vessels. **3.** May enter the wrong vessel. **4.** Danger of reaction to the catheter. **5.** Increased radiation to the patient and operator. **6.** Should employ serial filming. **7.** May overlook aberrant arteries. This may be minimized by injecting the aorta before the catheter is withdrawn with sufficient contrast to fill any other remote vessels.

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Figure 1-C. Angiograms of a boy with hypertension. The catheter is near the left renal orifice. This is a normal left renal angiogram. The arrow points to a narrowed area in the branch to the right upper pole with postenotic dilatation.

Figure 1-D. A right renal angiogram in a normotensive person. Three ml. adequately fill this kidney. The catheter should be at the orifice of the renal artery at the time of injection.

Isotope Chromium^{51}

The Evaluation of Selected Anemias With Radioactive Material

JOHN H. WINEINGER, M.D.;* SLOAN J. WILSON, M.D.;† *and* WILLIAM E. LARSEN, M.D., *Kansas City***

RADIOACTIVE CHROMIUM (Cr^{51}) is extremely useful for tagging red cells. Once the tagged red cell is destroyed by the body, the Cr^{51} is excreted in the urine and is not metabolically utilized. These characteristics are valuable in determining blood volume, red cell survival in normal subjects and suspected hemolytic disorders, and the sites of red cell sequestration.[1-11]

The usual laboratory tests for hemolysis are of an indirect nature and may not indicate blood destruction. The tagging of red cells gives more exact information as to destruction. Two methods may be

The destruction of red cells and their sequestration in the spleen and liver is demonstrated by use of red cells tagged with the radioactive isotope Cr.^{51}

From the Section of Hematology, Department of Medicine, University of Kansas School of Medicine, Kansas City, Kansas.

*Former Fellow in Hematology, University of Kansas Medical Center, Tucson, Arizona.

† Associate Professor of Medicine and Head of the Section of Hematology, University of Kansas School of Medicine.

** Assistant Professor of Medicine, University of Kansas School of Medicine.

Figure 1. Well-type scintillation counter and a scaler used in recording radioactivity of Cr^{51}-tagged red cells.

used: (1) The tagging of a patient's own cells, and (2) the tagging of normal donor cells and observing the rate of destruction in the patient.

Cell Rate Destruction

By observing the rate of destruction and the sites of sequestration, it may be possible to predict response to splenectomy. The important consideration is to demonstrate that the spleen is the site of active red cell sequestration. If the red cell survival is shortened and the spleen is the site of sequestration, splenectomy is recommended.

In the present study, the red cell survival was observed in 20 selected patients, 18 of whom had either moderate or severe anemia (see *Table I)*. The results were compared with tests usually available to determine hemolysis. An example of body scanning is presented to determine the sites of red cell sequestration and to evaluate the data in predicting the effect of splenectomy.

TABLE I
TABULATION OF OBSERVATIONS IN PATIENTS*

Case	*Diagnosis*	*Sex*	*Age*	*Hb. Gm.*	*Retic. Per Cent*	*Bilirubin* DIR.	TOT.	*24 Hr. U. U.*	*Iron Serum*	*Bone Marrow*	*Cr^{51} 50 Per Cent Survival*
1 A. H.	A.H.A.	M	62	8.0	0.8	0.6	2.3	22	220	Marked Erythroid Hyperplasia	17 days
2 A. C.	A.H.A.	F	52	2.9	87.8	0.5	3.9	18.1	182	Marked Erythroid Hyperplasia	2.2 days
3 C. S.	A.H.A.	M	57	4.8	36.4	0.4	4.2	13.5	220	Marked Erythroid Hyperplasia	40 hrs.
4 J. B.	A.H.A.	M	60	11.2	41.4	0.6	3.2	5.3	115	Marked Erythroid Hyperplasia	3.0 days
5. R. P.	A.H.A.	M	61	7.8	13.0	0.9	3.2	32.3	125	Marked Erythroid Hyperplasia	5.5 days
6 O. B.	Myeloid Metaplasia	M	62	9.7	1.4	0.1	0.9		75	Myeloid Metaplasia	25 days
7 L. N.	Myeloid Metaplasia	F	71	7.5	2.0				51		24 days
8 L. H.	Acute Monocytic Leukemia	M	54	8.4	3.0	0.1	0.4	0.3 (2 hr.)		Increased Immature Monos.	20 days
9 F. S.	C.L.L. and Hepatitis	F	40	7.8	8.0	12.0	14.0	17	200	C.L.L. and Erythroid Hyperplasia	12.5 days
10 C. K.	Hodgkin's Disease	F	59	7.2	0.0	0.0	0.5	2.8	20	Myeloid and Megakaryocytic Hyperplasia	15 days
11 R. G.	C.L.L.	M	49	9.2	5.6	0.1	0.3	2.5		C.L.L.	20 days
12 S. G.	T.B. and Anemia	F	69	8.3	0.2	0.1	0.7	8.0		Erythroid Hyperplasia	18.6 days
13 E. M.	Macrocytic	F	76	9.0	8.5	0.2	1.3			Marked Erythroid Hyperplasia	14 days
14 J. E.	Iron Def. Anemia	M	25	8.5	3.0	0.1	0.2	6.6	18	Erythroid Hyperplasia No Iron	26 days
15 R. S.	Pancytopenia	M	15	6.0	6.8	0.16	1.1	10.8		Erythroid Hyperplasia	31 days
16 V. M. E.	S.L.E.	F	18	10.0	2.8	0.3	0.7		30	Increased Eos. Lymphs and Plasma Cells	30 days
17 J. D.	Anemia and Diabetes	M	68	8.4		0.1	1.3		175	Erythroid Hyperplasia	27.5 days
18 H. K.	Hemochromatosis	M	67	11.5	3.2	0.4	0.9	0.2 (2 hr.)	100	Erythroid Hyperplasia	23 days
19 H. L.	Normal	M	40	14.2	0.4	0.1	0.7	4.06	30		31 days
20 T. F.	Normal	F	46	13.0	1.2	0.2	0.7		30		29 days

* The results of the Cr^{51}-tagged red cell survival studies may be compared with the more commonly used indirect tests for determining whether or not a patient is hemolyzing red cells.

Methods

All red cell labeling was performed under sterile conditions with sodium chromate ($Na_2Cr^{51}O_2$) diluted with normal saline to a specific activity of 100 microcuries per cc. as of time of assay. One hundred microcuries were added to 15 cc. of acid-citrate-dextrose solution. To this mixture was added 30 to 40 cc. of whole blood, with constant agitation. Thirty minutes with frequent mixing were allowed for the tagging of the red cells. At the end of this period of time, 100 Mg. of ascorbic acid were added to the mixture to stop any further labeling of the red cells by the chromate. This mixture was then re-injected into the patient. After one hour, a sample of blood was drawn from the patient and placed in dry "balanced" oxalate (potassium ammonium oxalate) to be used as a standard. The standard was prepared by taking duplicate 2-cc. aliquots of this first blood sample. They were centrifuged at 3,000 rpm. for two minutes. Plasma was removed and the volume was reconstituted to 2 cc. with distilled water to hemolyze the red cells and, thereby, insure uniform radioactivity.

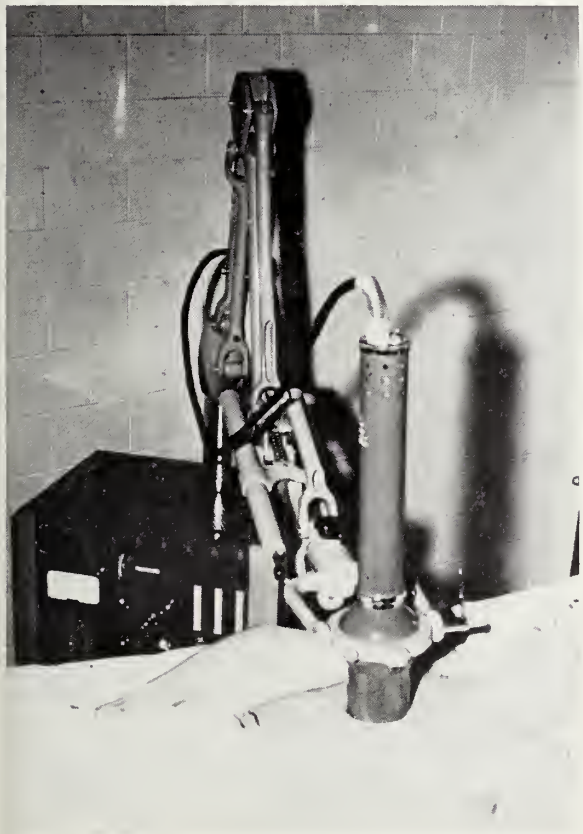

Figure 2. Measurement of body surface activity with a directional scintillation counter. Radioactivity is measured over the precordium, liver, spleen and sacrum. Ultimate sites of red cell sequestration may be determined.

Specimens were then collected from the patient at appropriate intervals in dry "balanced" oxalate. The radioactivity of 2 cc. of whole blood was determined in duplicate and compared with the standard. Correction for background was made. Activity of the patient's blood was expressed according to the formula:

$$\frac{\text{counts per min. of specimen}}{\text{counts per min. of standard}} \times 100 = \text{per cent on given day}$$

Activity of the plasma was also determined for each specimen; but, with the exception of the first day, was found to be of such low order (10 to 30 counts per minute) that it was ignored. The activity of all blood was determined with a well-type scintillation counter, and the Tracerlab 1,000 Scaler was used as a recording device *(Figure 1)*. Normal red cell survival is measured in terms of 50 per cent survival, the normal being from 27 to 31 days.

Body surface activity was determined with a directional scintillation counter, having a conical collimator four inches in depth and three inches in internal diameter at the open end *(Figure 2)*. Radioactivity over the precordium, liver, spleen, and sacrum was determined 30 minutes after injection of the tagged blood. All subsequent determinations were compared with these values to establish degree of organ uptake of radioactivity.

How Areas Are Counted

The areas to be counted were determined by physical examination. The counter was placed in such a way that the crystal was parallel to the body surface.

According to Jandl, *et al.*, an important degree of the activity of any given organ is derived from the profusing blood—as well as from scatter radiation from other organs and nearby vessels. It is impossible to determine absolute amounts of organ activity, since it has been found that precordial activity roughly parallels the activity of the whole blood; the relative expression of activity over a specific organ to activity over the precordium was used as an expression of the function of activity accumulated in the organ concerned.

Observations

In this study, there were five cases of idiopathic acquired hemolytic anemia (see *Table I*, Cases 1, 2, 3, 4, and 5). In our subjects, the destruction of red cells was extremely rapid, with 50 per cent survival ranging from 40 hours to 5.5 days. In the fifth patient the survival was 17 days.

In all but one of the cases of idiopathic acquired hemolytic anemia, the red cell survival studies could be correlated with the more commonly used laboratory procedures. These tests included reticulocyte count, bilirubin, urinary urobilinogen, serum iron,

and bone marrow studies. The results are tabulated in *Table I.*

There was definitely increased destruction of red cells in Cases 8, 9, 10, 11, 12, and 13, the 50 per cent survival being 20 days or less. It will be noted that the survival studies did not always agree with the other observations. The survival studies revealed the cause of the anemia—increased destruction due to hemolysis. Case 13 is of particular interest. This patient had a B_{12} and folic acid resistant megaloblastic anemia. The Co^{60}-B_{12} test of Schilling revealed normal absorption, so the patient did not have pernicious anemia. Red cell survival studies revealed a hemolytic anemia.

In Cases 7 and 8, there was evidence of slight destruction.

Figure 3 illustrates survival curves obtained in a normal subject and in representative patients.

Body scanning was done in a normal subject *(Figure 4)* and in a patient with an acute episode of idiopathic acquired hemolytic anemia (Case 5) *(Figure 5)*. Survival studies were also done. In the normal subject, the survival time was 29 days. Also note that there is little difference in the readings of the scanner over the spleen, liver and sacrum. Compare these findings with those of Case 5. The survival of red cells is drastically shortened and there is increased activity noted over the spleen and liver. All of these observations were repeated with tagged donor cells, the results being the same. The Coombs' test was positive.

On the basis of our observations, it was predicted that a splenectomy would not be curative. Unfortunately, this prediction was correct and the patient did not respond to splenectomy. He later responded to corticosteroids.

Discussion

At times it is impossible to determine the absolute cause of anemia. It is now possible to determine the rate of destruction of red cells and the site of sequestration. Thus, this additional knowledge has made it obvious that many of the unexplained anemias may be of a hemolytic type. Hemolysis has been described in malignancies, cirrhosis of the liver, the nephritides and various types of infections. It would

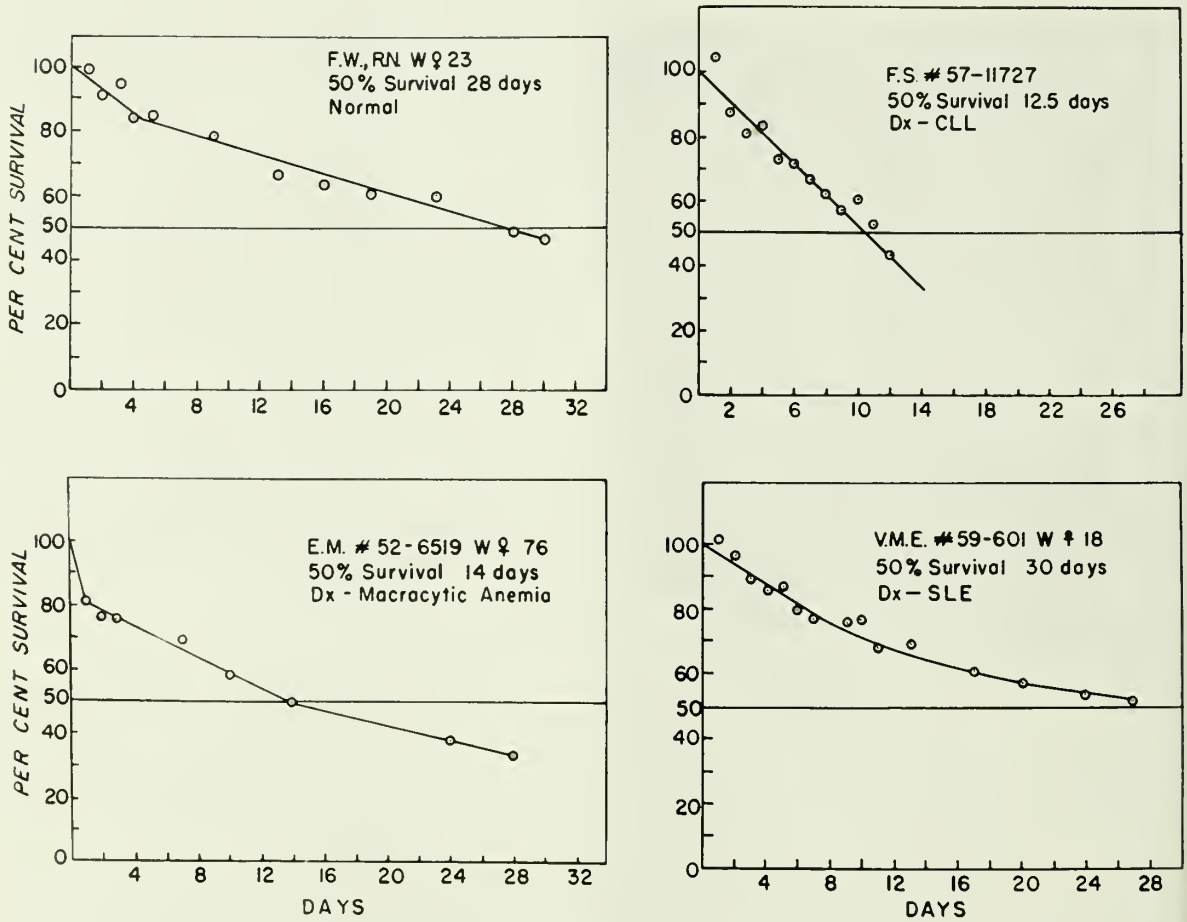

Figure 3. Illustrative red-cell survival curves in a normal subject and representative patients.

seem that an increased destruction of red cells should always be considered in bizarre, unexplained anemia.

It should be emphasized that the commonly used tests to demonstrate hemolysis are, in reality, indirect and may be positive when hemolysis is absent. Fecal urobilinogen studies, in our experience, have been most difficult to collect correctly and determine accurately. The true test, direct in character, is the actual tagging of red cells and the measurement of their survival time.

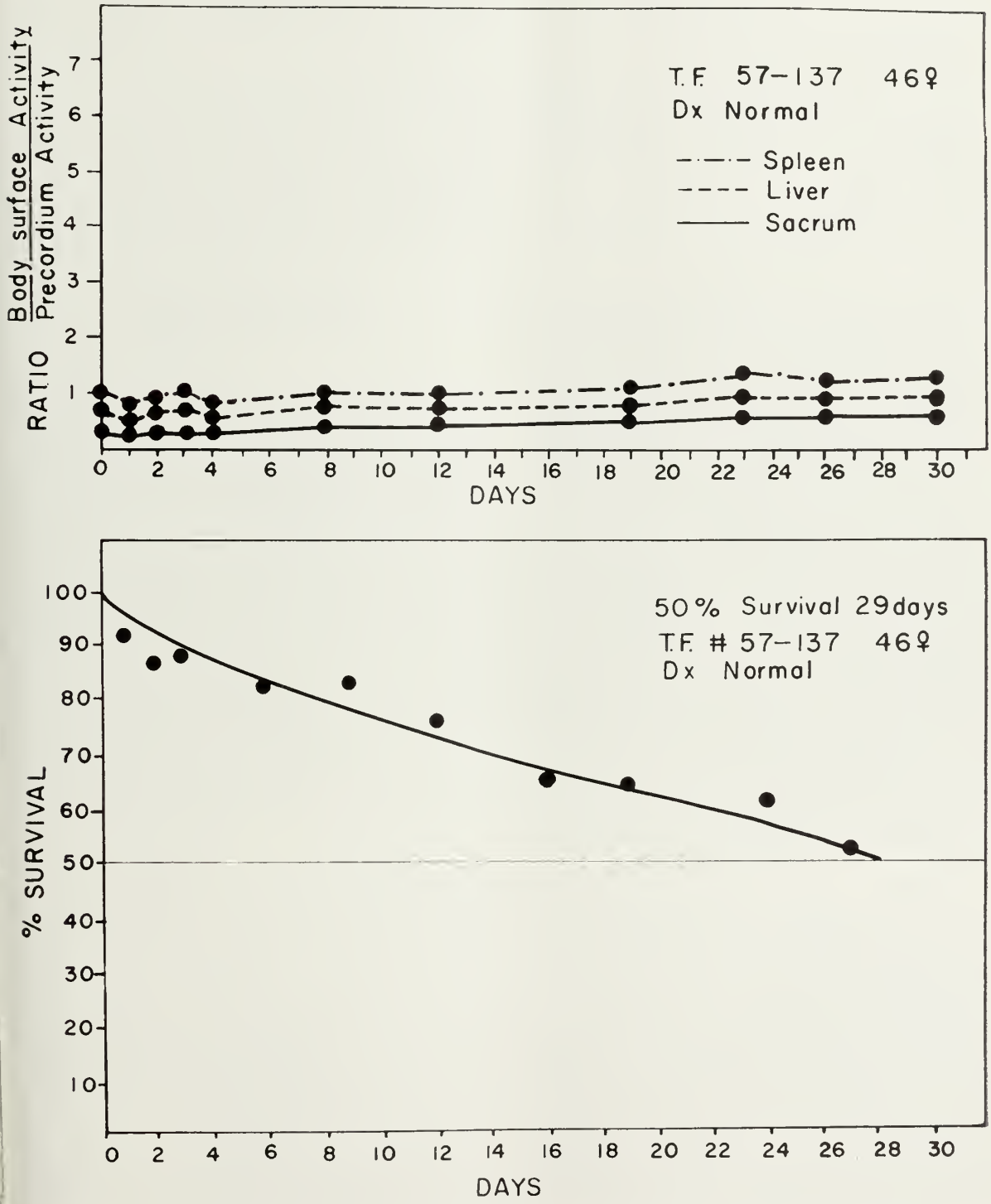

Figure 4. Studies on the survival of Cr^{51}-tagged red cells and body surface activity in a normal subject.

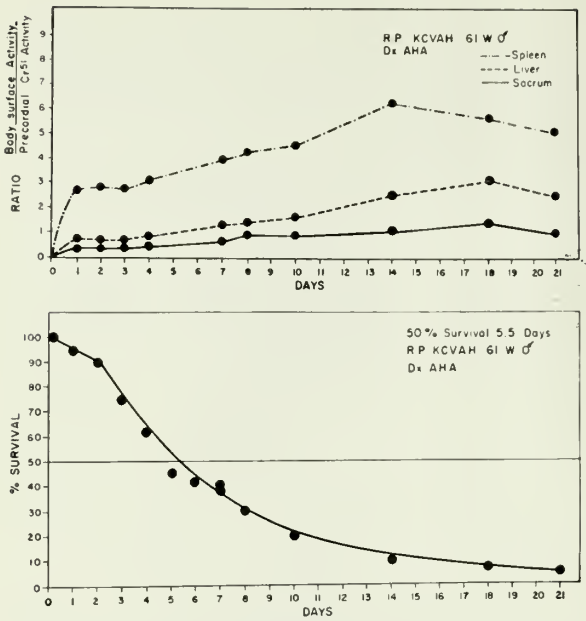

Figure 5. Studies on the survival of Cr^{51}-tagged red cells and body surface scanning in a patient with idiopathic acquired hemolytic anemia. Compare with *Figure 4*. The survival is decreased and the cells sequestered in the liver and spleen.

The use of body surface scanning to determine sites of sequestration has been difficult because many observations were made too soon after the injection of the chromate tagged red cells. It has been pointed out that, if the time for reaching a plateau is prolonged, surgery will be beneficial.[4, 7, 8, 11]

Red cell survival is greatly shortened in some acquired hemolytic anemias. Hemolysis may not be clinically evident in many patients if the destruction rate is only moderately increased. This is best demonstrated by red cell survival studies.

Body scanning may be useful in determining the site of sequestration of red cells. The results of splenectomy can be predicted.

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Hypnotic Wart Treatment

A Report of Treatment of Warts In An Eleven Year Old Child

WILLIAM SEEMAN, Ph.D.,* *Kansas City*

This paper reports a case involving the treatment of warts by hypnosis in an 11 year old girl. The warts disappeared following the third hypnotic treatment. Attention is called to experimental evidence justifying the presumption that the hypnotic treatment was actually the agent responsible for the disappearance of the warts.

THE TREATMENT OF WARTS by hypnotic suggestion is not exactly rare; indeed, Sinclair-Gieben and Chalmers in a recent issue of *The Lancet* state that "many workers have described the treatment of warts by hypnotic suggestion." One of the interesting features of the case to be reported here is the noteworthy efficiency (in terms of time) of the treatment; a second interesting feature of the case is the fact that the hypnotic treatment followed the removal of warts by surgery, with a subsequent return of the warts almost immediately.

Etiology of Warts

Concerning the etiology of warts I can do no better than to quote from Sinclair-Gieben and Chalmers: "The cause of warts is not as clear as some people suppose. The common assumption that a virus is responsible is based on the work of Variot (1894) and Ciuffo (1907), but these authors and others have shown only the presence of a virus by inference, inasmuch as they managed to transmit warts by the filtrate of ground-up warts. Inclusion bodies have been demonstrated in certain warts (Lyell 1950), but this in itself cannot be taken as proof of a virus. Pillsbury *et al.* (1956) cite the Koebner phenomenon (i.e., the appearance of lesions at the site of injury) as proof of the infective nature of warts, but this phenomenon is seen in other skin conditions, such as lichen planus and psoriasis, where no infective theory stands up to simple tests."

Case History

The mother of an eleven year old girl of above average intelligence was referred to this department by her pediatrician. Only shortly before the referral the girl had been suffering from several warts on the ball of her left foot. The warts had been surgically removed, only to return almost at once. At this point the surgeon suggested that another kind of treatment might be indicated. Following this, the mother was referred to the department of psychiatry of the Kansas University Medical Center by the pediatrician.

The technique of hypnotic induction used with the little girl was that of an imaginary television viewing. The girl was asked to close her eyes and to visualize her favorite program. (It turned out to be 77 Sunset Strip.) As she concentrated on this imaginary television program she was given suggestions to "relax deeper and deeper" and to go "deeper and deeper into hypnosis." Since the criterion of a sufficiently "deep" hypnotic state for the treatment of warts is said by Sinclair-Gieben and Chalmers to be one in which a post-hypnotic suggestion could be effectively given (which is to say, could be carried out by the hypnotic subject on "waking"), the post-hypnotic suggestion was given to the girl that on "waking," she would find her hand itching. And, indeed, she did indicate that she experienced the itching and did scratch the hand. (This is perhaps the place to point out that operators who have occasion to deal with hypnotic states in children are in general agreement that children typically have no difficulty reaching satisfactory "depth.")

How Suggestions Are Placed

In general, the hypnotic sessions were carried out in the following manner: When the girl was considered to be sufficiently "deep" in the hypnotic state she was told: "Your skin has natural healing powers. You will find as time passes that your warts will get smaller and smaller. They will become smaller and smaller and eventually disappear. Now I want you to imagine that I have a salve of some kind. I am going to put this on your foot and cover the warts. You will immediately experience the soothing effects of the salve. Furthermore, this salve is going to speed up the

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* Professor of Psychiatry (Psychology), University of Kansas School of Medicine, Kansas City, Kansas.

Peutz-Jeghers Syndrome

Intestinal Polyposis Associated With Pigmentation

WILLIAM A. REED, M.D., ***Kansas City***

In recent years a disease entity consisting of intestinal polyposis with pigmented spots of the skin and oral mucosa has been recognized and established. Although considered rare before the last decade, a review of the literature reveals approximately 90 recorded cases.

The first reference to this condition was by Hutchinson in 1896 when attention was drawn to the abnormal pigmentation. It remained for Peutz in 1921 to describe the association of abnormal pigmented spots and intestinal polyps, and to suggest that an hereditary factor might be involved. Jeghers, Ravitch, and Bartholomew have published excellent reviews of the disease in recent years.

Three Cases

The present report is concerned with three patients with this disease recently seen at the University of Kansas Medical Center.

Case One

A 40-year-old Negro housewife was admitted to the Medical Center on July 24, 1957. She was in labor on admission and gave birth to normal twins a few hours later. In the immediate post partum period manifestations of mild eclampsia and signs of small bowel obstruction appeared. Conservative treatment was instituted with improvement of the eclampsia, but the bowel obstruction persisted.

The significant facts of the family and past history indicated that a laparotomy had been done ten years previously at another hospital, subsequent to symptoms of bowel obstruction. An uneventful recovery followed the operation but the patient was unable to give an accurate account regarding the findings.

Her mother died at 30 years of age of "stomach trouble." Her father is living and well. One sister, now 38 years of age, had been operated upon for bowel obstruction at 21 years of age and is now living and well. Pigmented spots are present on the lips of the sister. The patient is the mother of nine living children ranging in age from one to 18 years. Pigmented spots are present on four children, two sons and two daughters. The patient was seen in consultation by the surgical service on the seventh post partum day when abdominal distention and cramping pain in the right side of the abdomen were noted. Numerous black smooth pigmented spots were present on the lips, buccal mucosa, and palmar surface of the hands.

The hemoglobin was 12.0 grams; the white blood cell count was 12,450; non-protein nitrogen, 77.5 mgms. per cent; serum sodium, 130 mEq/L; serum potassium, 5.5 mEq/L; chloride, 103 mEq/L; Co_2, 14 mEq/L. Roentgenograms of the abdomen showed multiple loops of dilated small intestine.

A brief review of the literature with a discussion of the salient features of the Peutz-Jeghers Syndrome is presented. Three additional new cases in a single family are described.

Laparotomy was advised and done on July 31, 1957. The cause of obstruction was a large polyp in the distal ileum with ileocecal intussusception. Evidence of previous bowel resection was present in the terminal ileum. Thorough investigation of the remaining gastrointestinal tract revealed two additional polyps in the proximal jejunum. The intussusception was reduced and a segment of ileum containing the polyp excised. The remaining polyps were individually removed through separate enterotomy incisions. Gross pathology of the excised polyps revealed the largest to measure 6 x 4 x 3 cm. Its microscopic appearance was that of a benign adenomatous lesion. The remaining polyps were slightly smaller with a similar microscopic picture.

Postoperative convalescence was complicated by a subcutaneous wound abscess which responded to antibiotics and drainage. Renal function gradually returned to normal, and the patient was dismissed on the twelfth postoperative day. She has since been asymptomatic.

Case Two

On September 2, 1957, a 16-year-old unmarried Negro girl was seen in the emergency ward of the University of Kansas Medical Center with the chief com-

From the Department of Surgery, the University of Kansas Medical Center, Kansas City, Kansas. Dr. Reed is an American Cancer Society Clinical Fellow.

plaint of abdominal pain of gradually increasing severity for 24 hours. The pain was described as cramping and was periumbilical. Nausea and vomiting had occurred two hours before admission. The patient stated that she had had a normal bowel movement 24 hours previously.

The patient had been operated upon four years previously at another hospital for "bowel trouble," but the exact nature of her illness could not be established. Her mother *(Case 1)* had been operated upon for ileocecal intussusception five weeks before admission of the daughter.

The patient was an acutely ill Negro girl. The rectal temperature was 101.2 degrees; blood pressure, 120 systolic and 70 diastolic; and the pulse rate was 140 per minute. Examination of the head and neck revealed pale conjunctivae. Numerous dark brown to black flat pigment spots measuring 0.1-0.3 cm. in diameter were noted on the buccal mucosa and lips. Similar areas were present on the palmar aspect of the hands. The abdomen was slightly distended. Bowel sounds were diminished, and tenderness with rebound phenomenon was noted in the lower abdomen. The remainder of the physical examination was non-contributory.

The hemoglobin was 6.2 grams per cent; hematocrit, 19 per cent, and the white cell count was 15,000 with 83 per cent polymorphonuclears. A urinalysis showed a mild pyuria (12-15 pus cells per high power field), one plus albuminuria and one plus glycosuria.

Exploration of the abdomen was performed on the evening of admission. An ilecocecal intussusception was found which could not be reduced and necessitated a right colectomy. A small easily reduced intussusception was also present in the proximal jejunum and two polyps were removed from this area through an enterotomy. The postoperative recovery was uneventful.

The specimen showed a polyp presenting at the leading edge of the ileocecal intussusception. None of the polyps showed microscopic or gross evidence of malignancy.

The patient was seen again in January, 1958, when she reported an episode of hematemesis and melena. Sigmoidoscopy confirmed the presence of blood. No source was found in the rectum. A barium enema was suggestive of polyps in the ileum. An upper gastrointestinal series was interpreted as normal. She has not returned for further examination.

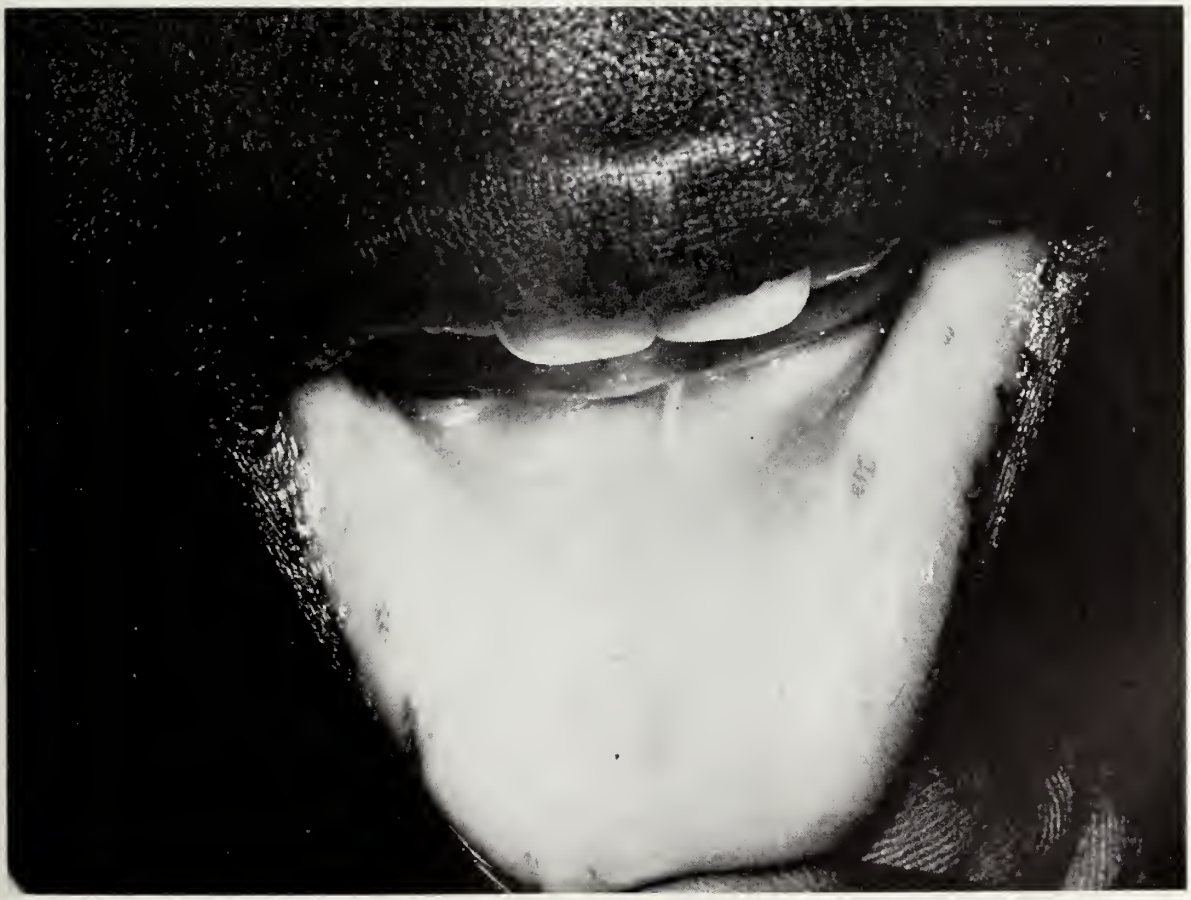

Figure 1. Typical pigmented areas on the lower lip. Similar areas were noted on the buccal mucosa (Case 3).

Case Three

A 15-year-old Negro boy, the son of the patient reported as Case 1, was admitted to the Medical Center on November 11, 1958, with a complaint of cramping abdominal pain for seven hours. Vomiting had occurred three times. One month before admission he had had a similar attack which subsided spontaneously, and he had had numerous other less severe episodes during the past two years.

The physical examination was non-contributory except for numerous dark brown, smooth, pigmented areas 0.1 to 0.3 cm. in diameter on the lips and buccal mucosa *(Figure 1)* and a slightly distended abdomen which was moderately tender in the right lower quadrant.

The urinalysis and the white blood count were normal. The hemoglobin was 12.0 gram per cent, and the hematocrit was 41 per cent. A sickle cell preparation was negative. An x-ray of the abdomen showed multiple loops of distended small intestine.

A laparotomy was carried out eight hours after admission. Numerous polyps were found throughout the small intestine with an area of intussusception in the midportion of the jejunum. The leading point of the intussusception was a polyp. Four palpable polyps were removed from the small intestine by multiple enterotomies and the intussusception was reduced. The postoperative course was uneventful.

Microscopic examination of the polyps showed no evidence of malignant changes.

Discussion

Bartholomew *et al,* reported a familial incidence of approximately 40 per cent. An additional five per cent had peculiar pigmented areas without demonstrable polyps. This is a slightly higher incidence than reported by Staley.[32]

Jeghers *et al,* writes that although the genetic pattern is similar to colonic polyposis, this is a different entity. Males and females carry the factor. They believe a patient with spots also has polyps, usually throughout the gastrointestinal tract. A single pleiotropic gene is responsible for both characteristics, polyps and spots, but may be demonstrated to have one or the other. In the family from which the above cases have been reported, two additional children have the pigmented areas. One has abdominal colic intermittently; the other is asymptomatic. Five additional children do not have spots and are asymptomatic. The appearance of three well-documented cases in one family as well as the presence of pigment spots and symptoms in other members of the same family would lend support to the previously reported strong familial tendency.[8, 9, 11, 17, 20, 21, 26, 29, 34, 35]

The presence of pigment spots without demonstrable polyps has been reported.[3, 32] It is difficult to ascertain the number of individuals with only pigment spots because clinical or x-ray evidence of polyps may not appear for many years.

The pigmented areas are most commonly located on the lips and buccal mucosa,[3] and less frequently on the hands, feet and face. Although some are present at birth, most are reported as appearing in early childhood. They are usually one to five mm. in diameter, dark brown to black, with a smooth, hairless surface. Dark complexioned individuals are commonly affected although cases in blond individuals have been noted.[21, 23, 24, 33]

Miscroscopic examination shows melanin pigment arranged in vertical bands.[20]

The incidence of Peutz-Jeghers syndrome is difficult to determine. A review of the literature reveals approximately 90 well-documented cases including the cases reported here. That is not an accurate figure, however, because many cases are currently not confirmed by operation or clinical symptoms. With increasing awareness of the syndrome, one would anticipate a rapid rise in the reported incidence.

It has been noted that these polyps are present throughout the gastrointestinal tract, but are particularly prone to appear in the small bowel. As a matter of fact, some doubt as to accuracy of the diagnosis should be cast on cases in which polyps are absent in the small bowel. Bartholomew reports demonstrable polyps in the small intestine of sixty-seven patients with this syndrome. Polyps appear less frequently in the colon, rectum, stomach, and duodenum respectively. More than one polyp has been found in 80 per cent of the cases.

Signs and Symptoms

The appearance of colicky abdominal pain is the single most common complaint. The pain may be acute in onset with clinical signs of partial or complete bowel obstruction. The patient may experience recurrent attacks over several years which do not require surgical relief.[22] The onset of complete obstruction is usually due to intussusception,[10] and may necessitate operative intervention. Intussusception is a common occurrence in any small bowel tumor as reported by Camp. Anemia is a frequently associated finding, and may be of moderately severe degree.[4] Intermittent intestinal bleeding coincident with abdominal pain explains the anemia in many instances. The presence of typical pigment spots is the single most easily established feature of the disease.

Age of Onset

The onset of symptoms occurs most commonly during the third decade of life. However, cases have

been reported in children as well as in the elderly. Troxell described the disease in a 77-year-old man.[33]

Sex

There appears to be no predilection for the disease to appear predominantly in one sex.

Pathology of Polyps

Considerable controversy exists as to whether or not the polyps undergo malignant change or are benign or malignant at their outset. Jeghers reported malignant change in one case, as did Foster and others.[1, 4, 5] Although some authors report malignant change as being present, there has been no report of lymph node or distant metastasis.[36] It has also been suggested that these lesions are hamartomas.[3] The usual appearance is that of a benign adenomatous polyp.

Treatment

In view of the long natural history for the disease, it is desirable to use an approach to the acute episode which will conserve as much tissue as possible. Reduction of the intussusception and simple polypectomy by enterotomy will satisfy this goal when possible. A thorough exploration of the bowel should be carried out with particular attention to the small intestine. Many unsuspected polyps may be found and removed, thereby preventing postoperative or early return of obstructive symptoms. A more radical approach toward the local lesion may eventually deprive the patient of a major portion of the small bowel in view of the multiple operations that are required in some individuals.

Elective laparotomy searching for small intestinal polyps in patients with characteristic pigment spots or laparotomy in asymptomatic patients with radiologically noted polyps is not indicated. Operative intervention should be reserved for the patient with acute obstructive symptoms or for those in whom the diagnosis is in doubt.

In spite of the tendency to recurrent episodes of obstruction, the general outlook is good. The absence of reported cases of death as a result of metastatic disease is encouraging. Most patients remain essentially asymptomatic between episodes.

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Hypnotic Wart Treatment

(Continued from page 151)

natural healing powers of your skin. It is going to help your skin to get rid of these warts. It will help your skin to exercise its natural healing power that much faster." Following this, the patient was permitted to remain in hypnosis for a few minutes and then brought out. There were three hypnotic sessions in all; the first lasted a half hour, the others requiring only twenty minutes each. The sessions were spaced at weekly intervals. At the end of the first week the patient claimed to note a definite decrease in the size of the warts. Following the third session the warts had undoubtedly disappeared and at this writing (two months later) have not reappeared. The treatment, then, appears to be quite simple; the time in this case required two weeks less than the minimum time reported by Sinclair-Gieben and Chalmers.

In view of the fact that spontaneous recovery from warts is not uncommon the question might conceivably be raised: How do we know it was the hypnotic treatment that was responsible for the cure, and not, indeed, such spontaneous recovery? Conceivably, one might wish, in answering this question, to invoke the logic of the immediate and particular situation. That is, it might be argued that, far from revealing tendencies to spontaneous recovery the patient actually reproduced new warts immediately on surgical excision. Consequently (it might be contended) this tendency to reproduce the warts was effectually neutralized by the hypnotic treatment. However, instead of invoking this kind of argument, I should prefer to remain within the general logic of clinical medicine. That is, the physician must face the fact that in *any* given clinical treatment of a patient, no matter what the procedure, it is quite simply not possible to claim within the logic of empiricism that it is the *treatment* which produces the effect on the patient.

Placebo Effect

If a physician uses medication on a patient who has complained to him, "Dr., I can't sleep!" and the patient subsequently reports improvement in sleep, the physician is not warranted in claiming knowledge that this sleep was induced by the chemical characteristics of the drug. There *may* have been "spontaneous recovery" or there *may* have been a "placebo effect" such that *anything* given the patient by the physician (so long as it was not harmful) might have resulted in inducing sleep. Consequently, the physician is justified in claiming knowledge that *the particular drug administered* was the sleep-inducing agent if, and only if, he can point to or invoke adequate experimental evidence to this effect. In other words, if someone has done an experiment with this drug, controlling adequately for all of these other variables, which experiment justifies the conclusion that *this drug* is the sleep-inducing agent, then (and only then) the physician is justified in claiming that *the drug administered to the patient* was probably the sleep-inducing agent.

Following this logic of clinical medicine it must be said that in the present case the efficacy of the hypnosis as the agent responsible for the disappearance of the warts can be claimed only in conjunction with experimental evidence controlling for spontaneous remission. The experiment reported by Sinclair-Gieben and Chalmers provides just such evidence. These investigators controlled for this variable with admirable rigor, using patients with bilateral warts and treating only one side. In their main experiment, immediate improvement was reported and observed only on the treated side in ten patients out of ten who met the criterion of ability to carry out a post-hypnotic suggestion. (One patient failed to improve, but this patient did not meet the criterion.) The statistical probability corresponding to these results (i.e., ten improvements out of ten) is well beyond the .01 level of confidence.

Department of Psychiatry
University of Kansas Medical Center
39th and Rainbow
Kansas City 12, Kansas

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A person remains immature, whatever his age, as long as he thinks of himself as an exception to the human race.—*Harry A. Overstreet*

Inhibitors of Tumor Growth

N-Chloroacetyl β Alanine, N-Chloroacetyl Glutamic Acid, and Azaserine

ROBERT W. BROWN, M.D.; *and* SANTIAGO GRISOLIA, M.D.,
Kansas City

Nineteen patients with histologically proven malignancies were treated with these agents and their findings are reported in this article.

IT HAS BEEN SHOWN previously that the N-chloroacetyl derivatives of β alanine and glutamic acid potentiate themselves as inhibitors of tumor growth in rats.[1]

The possibility of further potentiating the action of these inhibitors with azaserine® (O-diazoacetyl-L-serine) was investigated and found promising. Intraperitoneal administration of ten micromoles each of chloroacetyl β alanine and of chloroacetyl glutamic acid or of 33 gammas of azaserine had little, if any, effect on the growth of Ehrlich ascites cells with 20 gram mice. However, when combined they delay growth up to 18 days *(Figure 1)*. Ceasing administration resulted in renewal of growth at pretreatment rate *(Figure 2)*.

Dr. Brown is from the McIlvain Laboratories, University of Kansas Medical Center, Kansas City, Kansas; and Veterans Administration Hospital, Kansas City, Missouri and Dr. Grisolia is from the McIlvain Laboratories, University of Kansas Medical Center.

Toxicity Inversely Proportional to Amount of Tissue

It is noteworthy that the weak toxicity of the chloroacetyl compounds was inversely proportional

TABLE I

DIAGNOSIS, DURATION, AND PREVIOUS THERAPY IN PATIENTS TREATED WITH CHLOROACETYL β ALANINE, CHLORACETYL GLUTAMIC ACID AND AZASERINE*

Patient Number	*Primary Carcinoma*	*Duration Before Treatment*	*Previous Treatment*
1	Skin, squamous cell	13 months	X-ray, 5,000 r.
2	Breast	5 years	None
3	Breast	30 months	X-ray
4	Metastatic adenocarcinoma to liver	5 months	Nitrogen mustard
5	Uterus	34 months	Panhysterectomy
6	Kidney	15 months	Nephrectomy, x-ray, nitrogen mustard
7	Lung, squamous cell	6 months	Nitrogen mustard, x-ray
8	Lung, squamous cell	10 months	None
9	Pancreas	12 months	None
10	Lung, adenocarcinoma	4 months	None
11	Lung, anaplastic	5 months	None
12	Lung, anaplastic	12 months	None
13	Stomach	8 months	Nitrogen mustard
14	Breast	10 months	Radical mastectomy, x-ray
15	Lung, anaplastic	1 month	None
16	Lung, adenocarcinoma	3 months	Laparotomy, with adrenalectomy
17	Lung, anaplastic	10 months	Nitrogen mustard, x-ray
18	Colon,** adenocarcinoma	16 months	Partial colectomy
19	Kidney**	2 months	None

* Objective findings of tumor regression were observed in none of the patients.
** Patients 18 and 19 tolerated prolonged therapy without side effects.

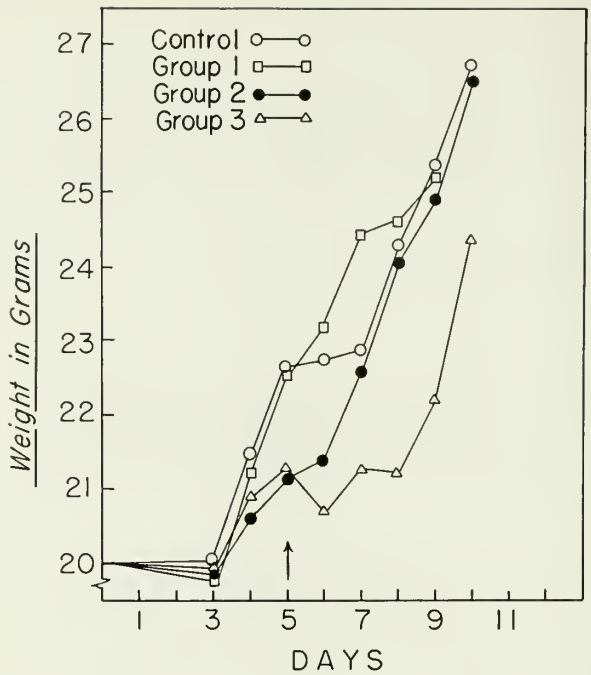

Figure 1. The effect of intraperitoneal administration of chloroacetyl amino acids and of azaserine on growth of Ehrlich ascites cells.

Each group (six animals, expressed in the graph as the average weights per group), was inoculated with about one million Ehrlich ascites cells. As indicated by the arrows on the fifth day each group was injected intraperitoneally as follows: 0-0, 0.5 ml. saline; □-□, 0.5 ml. of neutralized solution of 10 micromoles each chloroacetyl β alanine and chloroacetyl glutamate; •-•, 0.5 ml. of saline solution containing 33 micrograms of azaserine; Δ-Δ, 0.5 ml. each of the chloroacetyl amino acids and of azaserine solutions. Injections were repeated on the sixth and seventh days.

to the amount of tumor tissue. These findings indicated the desirability of testing combinations of inhibitors which may be acting at several bio-chemical levels, for arresting and perhaps eradiction of neoplastic growth. After toxicity studies the compounds were tested in increasing single doses in humans with far-advanced carcinoma, until maximum calculated dose (100 micromoles for each amino-acid derivative as the sodium salt and from one to 1.25 mg. azaserine per Kg.) was reached.

Nineteen patients with histologically proven malignancies were treated. Seventeen patients received a series of three intravenous infusions on successive days. Two patients *(No. 18 and 19)* received, in addition, a weekly infusion for three months. No change in tumor size was observed. Four patients had favorable clinical response with decreased fever and pain but not directly attributable to the medications. Toxic manifestations were mild, nausea, and vomiting in nine patients and transient mental confusion in two patients. Table I shows the tumor origin, duration of symptoms prior to treatment, and previous therapy.

As seen in the clinical trials the combinations were not effective in altering the course of the disease or size of tumor mass. Moreover, the doses used resulted in no depression of bone marrow elements.

Potentiating Effect

On the other hand, the experimental evidence that inhibitors such as the ones used here have a potentiating effect in retarding tumor growth and are without significant toxic side effects in humans indicates the desirability of testing combinations of inhibitors acting at several bio-chemical levels.

We wish to extend our thanks to Dr. M. Chiga for help with some of the studies, to an institutional grant of the American Cancer Society, to a grant of the Kansas Cancer Society, and to Dr. C. J. Gajewski of Parke Davis Company for the azaserine.

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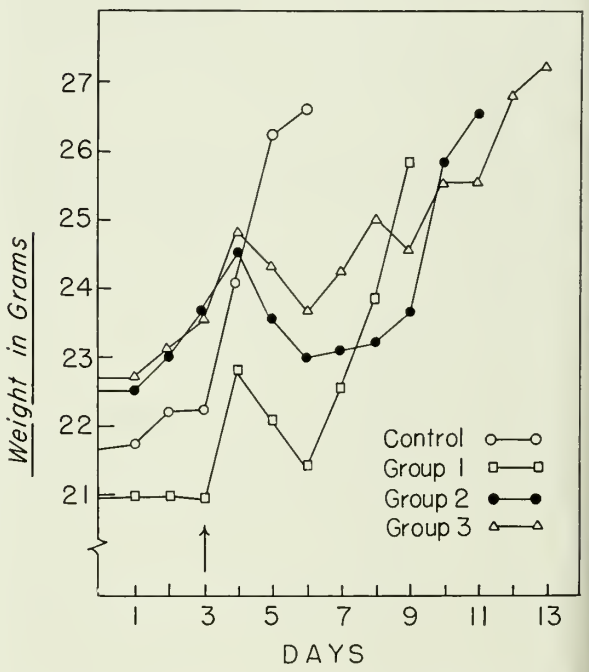

Figure 2. The effect of length of administration of chloroacetyl amino acids and azaserine on growth of Ehrlich ascites cells.

The experimental conditions were as for *Figure 1*, except that group one was treated for three days, group two for five days and group three for seven days. In all experiments injections started the third day following inoculation of Ehrlich ascites cells, as indicated by the arrow.

Tranquilizers? Ataractics? Sedatives?

The So-Called Tranquilizers Are Reviewed and Classified

JESSE D. RISING, M.D.,* *and* **EDWARD J. WALASZEK, Ph.D.,**** *Kansas City*

EVOLUTIONISTS HAVE PONDERED the question, "What is man?" without notable success for a good many years. Such terms as "tool-maker," "fire-maker," and "user-of-language" have been applied, each with the assumption that the acquisition of the indicated skill marked the separation of the human species from the bestial multitude; but all have been placed in doubt by archeological findings except for speech which, although it may be the best of the criteria, cannot be traced by archeological methods. Another characteristic might well be investigated, for there is much evidence to favor the appellative "man-the-worrier." So far as we know the earliest and most primitive of the humankind have resorted to naturally occurring substances—we would call them phrenotropic drugs today—to allay their anxieties and ennui and to give them peace of mind and courage.

No one has estimated the antiquity of alcohol, hashish, pyote, tobacco, coffee, tea, and coca to name a few of the "delight makers," but they are of unfathomed antiquity; and, for whatever it may signify, the stimulants have perhaps enjoyed greater use than the depressants. It is indeed true that pharmacology is older than agriculture.

Whether, as some contend, there has been an increasing use of stupifying drugs since the introduction of the barbiturates in the early years of this century is really somewhat doubtful, but there can be no question about the magnitude, probably excessive, of this phase of the drug industry, and the interest of the medical profession and the laity alike rose to an unprecedented pitch with the introduction of the tranquilizers (called by some ataractics) some five years ago.

Because they were called by a new and, in therapeutic circles, previously unused name it has been widely assumed that these drugs share some major characteristics and differ fundamentally from previous sedatives and hypnotics. A search of the dictionaries does not, however, confirm this assumption. Indeed, it appears that the word "tranquilizer" is synonymous with "ataractic," and it is difficult to distinguish from "sedative" which is defined as an adjective which means "tending to calm, moderate or tranquilize." The enormous commercial success of the word "tranquilizer" has led drug manufacturers to search for other semantic gold mines, and they have coined such beguiling terms as "calmative," "psychosedative," and "neurosedative" to mention a few.

Tranquilizer Pharmacology

What is the real substance that supports these terms? In attempting to answer this question we shall first gather the tranquilizers together into their main groups and then examine their pharmacological characteristics so that we can find the actions which are common to the whole as well as those which are unique. The tranquilizers in common use are easily divided into four main groups which have been subjected to rather extensive pharmacological scrutiny with the aim of delineating their mechanisms and loci of action. These are (1) the phenothiazines, (2) the Rauwolfia alkaloids, (3) diphenylmethane derivatives, and (4) substituted propanediols (and butanediols).

In the so-called tranquilizers the medical profession has been given a group of drugs that have therapeutic possibilities beyond those of previous agents. It is probably not wise to classify them indiscriminately as tranquilizers, but rather to recognize each of the major groups for its unique pharmacologic, therapeutic, and toxic possibilities.

The type drug of the phenothiazines is chlorpromazine. Members of this group have adrenolytic, anticholinergic, and antihistaminic characteristics, but the several drugs are endowed with them in different proportions, and some members of the group have been used almost exclusively as antihistaminic drugs *(Table I)*.

The Rauwolfia alkaloids, typified by reserpine, have the ability to release the biogenic amines (epinephrine, norepinephrine and serotonin) from sundry tissues. Whether or not as a result of this action, drugs of this group apparently cause central depression of the sympathetics with the result that there

* Associate professor, medicine and pharmacology, University of Kansas School of Medicine, Kansas City, Kansas.
** Associate professor of pharmacology, University of Kansas School of Medicine, Kansas City, Kansas.

TABLE I

TRANQUILIZERS
PHARMACOLOGIC EFFECTS

	Rauwolfia	*Phenothiazine*	*Diphenylmethanes*	*Meprobamate*
Anticholinergic		+	++	
Adrenolytic		+++		
Antihistaminic		++	++++	
Release biogenic amines	++++			
Potentiate barbiturates	++	+++		
Antagonize strychnine	0	0	0	++++

is a parasympathetic predominance, and they superficially seem to act as cholinergic agents in many respects.

The diphenylmethane drugs have actually been longest used as antihistaminics, but they also have anticholinergic or atropine-like effects. Hydroxyzine is an example of this group, most members of which were originally produced in an effort to secure marketable anthihistaminics only to be shelved when it was discovered that their tendency to cause excessive sedation made them unsuitable for this purpose.

The propanediol group, represented by meprobamate, act as central muscle relaxants which have the ability to abolish strychnine convulsions but not those induced by pentylenetetrazol which indicates a locus of action in the internuncial neurone. Their psychic effects were discovered later.

This is a motley group of drugs to place in the same category. They must have something in common —if not a common mechanism at least a common site of action should be discernible. How *do* they work?

Mechanisms of Action

Fundamentally, sedation and tranquilization can result from excitation of inhibitory centers of the brain as well as from inhibition of the excitatory centers. Furthermore, it must be remembered that stimulants can cause tranquility through the relief of tension that goes with an elevation in mood such as can be observed with the judicious use of cocaine or amphetamine.

In order to pinpoint the actions of pharmacologic agents of this type and define their mechanisms it is important to have a good working knowledge of brain physiology, including brain biochemistry. This is where we run into difficulties! But there are certain clues which allow us to formulate hypotheses which can be put to test with the expectation of increasing our knowledge of this field bit by bit. It has long been known that acetylcholine is a neurohumor of importance in ganglionic transmission, and there is evidence that it functions to facilitate interneuronal transmission in the brain. Some authorities are of the opinion that the biogenic amines such as epinephrine, norepinephrine, and serotonin are neurohumors which impede interneuronal transmission in the brain. Even the ubiquitous histamine is thought by some to be an important neurohumor. There is even some indication that emotional states occur in concert with fairly typical neurohumoral changes; that anxiety, fear and depression can be equated with the flight component of the fight-or-flight response and are characterized by a preponderance of epinephrine effect, whereas in anger and aggression (fight component) there is an excess of norepinephrine. Another neurohumoral agent is a polypeptide called Substance P. This substance seems to be a sedative and to inhibit polysynaptic neuronal pathways. Since it is naturally present in the brain some investigators suggest that the role of Substance P is that of a physiological tranquilizer.

These speculations become more intriguing when we consider the fact that so many of the tranquilizers have effects that are related to the substances just mentioned. The phenothiazines, as previously noted, have antiserotonin, anti-epinephrine, anti-acetylcholine, and antihistamine effects. Rauwolfia alkaloids release serotonin, epinephrine and norepinephrine. Finally, the diphenylmethanes are both antihistaminic and anticholinergic. Meprobamate and other members of the propanediol group, which act as central muscle relaxants, act synergistically with Substance P.

Anatomic Sites of Action

Up to this point tranquilizers appear not to be unique or to have any significant property in common. Perhaps an examination of the anatomic sites of action will be more revealing. The phenothiazines are known to depress the brain stem alerting system

TABLE II

TRANQUILIZERS
SITES OF ACTION

	Rauwolfia	*Phenothiazine*	*Diphenylmethanes*	*Meprobamate*
Depress MDAS	Stim.	++++	++++	
Depress thalamus				+++
Depress hypothalamus	+++	+++		++
Stimulate amygdala	+++	++++		

which is important in maintaining the brain in the waking state, and which has widely been assumed to have some importance in the control of the emotions *(Table II)*. They also depress the hypothalamus which is undoubtedly an important center for the integration of emotional responses. Finally, they disrupt the rhinencephalon or limbic system which is a phylogenitically ancient and important integrative center and is thought to be of fundamental importance in man as a center for coordinating the baser or animalian components of his psyche. This disruption is not accomplished by depression, but seems rather to be the result of over-stimulation of the amygdaloid nucleus, an important way station in that part of the limbic system which is sometimes called Papez circle.

The diphenylmethanes also depress the brain stem alerting system, but other sites of action in the brain are not understood. It is hazardous to ascribe much importance to depression of the MDAS because atropine, among others, very effectively depresses this structure without having sedative or tranquilizing effects.

The Rauwolfia alkaloids on the other hand stimulate the brain stem alerting system (mesodiencephalic activating system or MDAS), but this is offset by a depression of the hypothalamus. The limbic system is, again, disrupted by overstimulation of the amygdala.

Less is known about meprobamate, but it seems that it depresses the thalamus and limbic system.

Behavioral Effects

So far we have not been successful in separating the new drugs, the tranquilizers, from other medications or in pulling them together into a neat package. Perhaps their behavioral effects *(Table III)* will throw more light on the subject. Meprobamate, Rauwolfia and the phenothiazines have a taming effect on monkeys; in other words, appropriate doses of these drugs can render these aggressive animals quite docile without putting them to sleep. This particular effect is of limited importance in human medicine, if one excepts the simian reactions of certain psychotics, and it is not often recognized that, milligram for milligram, the phenothiazines are about as potent hypnotics as secobarbital.

Much has been made of the ability of the tranquilizers to antagonize conditioned responses. Meprobamate apparently lacks this characteristic, but it is prominent in the phenothiazines and Rauwolfia alkaloids. The fly in the ointment here is that morphine, alcohol and atropine—a disparate group—share this feature with the two favorite tranquilizers. On the other hand, it has been found that meprobamate reduces the fear behavior in water fowl during the optimum period for imprinting, but makes it almost impossible to imprint the birds. After the meprobamate has worn off imprinting can be accomplished at a time when the critical period for imprinting would normally be passed. Pentobarbital interferes with imprinting but does not extend the critical period, whereas chlorpromazine does not interfere with imprinting but *does* prolong the critical period. These are intriguing observations, and doubtless have fundamental importance which will be elucidated as more work is done. At the moment, however, it is a bit hazardous to project these concepts too far into human therapeutics.

TABLE III

TRANQUILIZERS
BEHAVIORAL EFFECTS

	Rauwolfia	*Phenothiazine*	*Diphenylmethanes*	*Meprobamate*
Depress conditioned response	+++	+++		
Prevent imprinting ...		0		+++
Prolong imprint period .		+++		+++
Taming effect on monkeys	++++	++++		++++

A Semantic Trap

For the moment, then, it appears that our quest has only demonstrated that no pharmacological action is unique to the tranquilizers, and none is common to them. If we are to deal with these drugs rationally it is important not to fall into a semantic trap and lump them together in one group under the name "tranquilizers." We should, on the other hand, define their actions and mechanisms and classify them on that basis. It seems certain that, at least at the level of the practicing physician—the therapeutic level—the introduction of the terms "tranquilizer" and "ataractic" have led to the uncritical use of drugs and has done more harm than good. Something can be said for completely abandoning the term "tranquilizer" rather than continuing to use it and be led into sloppy thinking and haphazard therapeutics.

Until recently the only alternate or complement to psychotherapy in the treatment in acute and chronic anxiety states, obscessive-compulsive neuroses, psychotic agitation and mania, toxic delirium (as in alcoholism), and the symptoms accompanying drug-withdrawal was drug therapy with "standard" sedatives and hypnotics. The bromides are in many ways ideal sedatives, but they are too mild in action to be especially useful in the treatment of severe agitation, and they tend to produce unpleasant side effects

TABLE IV

TRANQUILIZERS
AUTONOMIC SIDE-EFFECTS

	Rau-wolfia	*Pheno-thiazine*	*Diphenyl-methanes*	*Mepro-bamate*
Indigestion	+++			
Peptic ulcer	+++			
Diarrhea	+++			
Fecal impaction		+		
Impotence	++	++		
Hypotension	++	+++		

such as skin rashes on prolonged use. The worst complication associated with their prolonged use is, of course, the well known bromide psychosis. The other drugs mentioned are, in essence, hypnotics rather than sedatives, and they tend to produce excessive drowsiness when used in the treatment of the conditions mentioned. The newer drugs, which are the subject of the present discussion, were introduced in the hope that they would produce a calming or taming effect in patients without making them too sleepy to carry on their routine activities.

Their Chief Benefits

Among the chief benefits of the tranquilizers has been the stimulus which they have given to research in psychophysiology and psychopharmacology, and these fields are now receiving long overdue attention. It may be stated, in addition, that most of these agents are effective *aids* to psychotherapy. It must be emphasized that psychotherapy is the treatment of choice, and that the tranquilizers give the patients needed support during the earlier phases of psychiatric treatment. In addition, they decrease excitement and over-activity as well as agitation and furor, and they minimize the patient's *reactions* to delusions and hallucinations without having any definite effect on disordered ideation. These actions combine to make patients more accessible for psychotherapy.

There is no such thing as a drug that has no deleterious side effects or toxic actions, and physicians must remember that the tranquilizers are potent agents which have numerous toxic potentialities. It is important, therefore, to recognize that, while they have an important place in modern therapeutics, their use is attended by numerous hazards; and physicians must know enough of their indications and pharmacology to use them wisely. We certainly are not justified in employing them in the treatment of every person who is a little nervous or who poses a problem in psychotherapeutic management for the family physician. Many jokes have arisen surrounding the theme of tranquilizers, and even some serious literature has appeared concerning the possibility of achieving nirvana. Perhaps this is as good a place as any to point out that, if we can believe the lessons of history, a little anxiety is a very good thing.

Side-Effects

The effects of drugs are mediated through the various physiological mechanisms of the body; and there are effects, therefore, upon many aspects of bodily function as well as upon mood and other general aspects of psychological functioning. Medicine has long been aware not only of the physiological but also of the psychological side effects of many of its therapeutic agents. The physician has always had to calculate the therapeutic value of each drug for a specified purpose for the patient in question as balanced out by possible or probable undesirable side effects of either a physiological or psychological nature. The ability to make such decisions properly represents a large part of the successful practice of medicine. In the case of the new psychologically significant drugs the focus of the physician is primarily upon the psychological effects, while at the same time being alert for the physiological ones. It is well to remember that with these drugs the possible side effects are of both a psychological and a physiological nature.

Rauwolfia Derivatives

Rauwolfia derivatives were the first tranquilizers to be designated as such, and they enjoyed some reputation as calming agents for various states of hyperactivity. They were largely replaced by the phenothiazine, chlorpromazine, which has since been partially replaced by the newer phenothiazine derivatives.

The chief adverse behavioral effect which has been attributed to the Rauwolfia derivatives is psychotic depression, and many patients have actually committed suicide while under the effect of the drugs.

TABLE V

TRANQUILIZERS
CNS TOXICITY

	Rau-wolfia	*Pheno-thiazine*	*Diphenyl-methanes*	*Mepro-bamate*
Parkinsonism	++	+++		
Grand mal seizures	++	+++		
Withdrawal seizures				++
Overdose convulsions			++++	

They also tend to cause undue lethargy and social withdrawal, and many patients complain of bizarre dreams. They share with the phenothiazine group the ability to cause parkinsonism and epilepsy, and their effects on the autonomic nervous system lead to such gastrointestinal symptoms as nausea, hyperchlorhydria —and even activation of peptic ulcer, flatulence and diarrhea. Nasal congestion is often complained of. Impotence is occasionally a disturbing side effect. Some patients retain sodium and water while on Rauwolfia medication, even to the point of clinical edema; and a few cardiac patients have developed frank heart failure while on this type of medicine, their decompensation subsiding promptly on discontinuing the medication. A point to remember about the Rauwolfia derivatives is their onset of action and duration of action. With the reserpine group cumulative effects are seen, and this requires a careful adjustment of dose. Furthermore, the onset of the tranquilizing action is such that the tranquilizing effect is seen only after a few days, and this effect persists after the withdrawal of the drug. If therapy with another shorter acting tranquilizer is contemplated it would be important not to begin treatment too soon after the withdrawal of the reserpine or an alarming synergistic effect might be noted.

The Phenothiazines

The clinical effects of phenothiazine tranquilizers are numerous and varied. They are especially effective in the control of excessive agitation and hyperactivity in both psychotic and psychoneurotic patients, and have been quite useful in controlling alcoholic delirium as well as drug-withdrawal syndromes. They early found a use as effective antemetics, and hiccups may respond to treatment by members of this group when all other types of therapy have failed. They have also been employed with possibly less effect in the treatment of pruritis.

Phenothiazines can, on the other hand, cause such adverse behavioral effects as restlessness, nightmares, social withdrawal, depression, unreality feelings, and even hallucinations and illusions. They are known to cause such central nervous effects as epileptiform seizures at times, even in persons who have had no clinical or EEG tendency toward them, and extrapyramidal syndromes which may mimic parkinsonism exactly or be exceedingly bizarre. Their effects on the autonomic nervous system may lead to very marked nasal congestion or constipation, the latter occasionally reaching such severity as to cause fecal impaction. Impotence is not an uncommon result of treatment. They may, of course, cause the whole gamut of allergic reactions, and have been known to cause dermal photosensitivity, dermatitis, purpura, and agranulocytosis. Whether the jaundice which some of them cause is allergic has been debated, but it is usually attributed to this mechanism. These agents are also effective synergizers of analgesic, sedatives and anesthetics and they can be effectively used to reduce the dosage of other drugs. In this regard it is important to remember this facet of their action in order to avoid inadvertent and unwanted potentiation of other central nervous system depressants.

TABLE VI

TRANQUILIZERS
ADVERSE BEHAVIORAL EFFECTS

	Rauwolfia	*Phenothiazine*	*Diphenylmethanes*	*Meprobamate*
Somnolence and lethargy	+++	+++	+++	+
Restlessness and nightmares	+++	++		
Social withdrawal	++++	++		
Psychotic depression	++++	++		

TABLE VII

TRANQUILIZERS
ALLERGIC REACTIONS

	Rauwolfia	*Phenothiazine*	*Diphenylmethanes*	*Meprobamate*
Jaundice		+		
Agranulocytosis		+		
Purpura		+		
Dermatitis		+		+

Propanediol Group

Only one representative of the propanediol group has been widely used, and this is meprobamate. It has enjoyed some popularity in the treatment of muscle tension headache and sundry other painful conditions which have been assumed to be a combination of "nervousness" and muscle spasm. It has not been notably effective in this regard, but has achieved wide popularity as a simple sedative and hypnotic. Patients appear to respond to meprobamate rather irregularly: some feeling little or no effect at standard doses (400 mg. two to four times daily) while others have a hypnotic effect from a single dose of 200 mg.

The side effects of meprobamate are rather like those of the barbiturates, and patients who have taken high doses of the drug for long periods may have a withdrawal syndrome characterized by epileptiform convulsions. This drug is essentially ineffective in the

treatment of major psychiatric disorders. Adverse behavioral effects and toxic effects on the central nervous system are, in general, considerably less than with Rauwolfia and phenothiazine agents, and effects on the autonomic system are unimportant. Allergic reactions can, of course, occur, but they are by no means as frequent as with the phenothiazines.

The Antihistaminics

The diphenylmethane derivatives are essentially sedatives and hypnotics, and are quite properly classified as sedative antihistaminics. They are relatively safe sedatives, and, used as hypnotics, they are more effective in geriatric practice than the older hypnotics which have a strong tendency to cause excitement and delirium. These drugs are, of course, not entirely devoid of this potentiality, but it is much less pronounced in them than in most of the other agents which have been used. In high doses these drugs cause excitement, and toxic doses cause convulsions. Children are particularly prone to have severe convulsions—even resulting in death—from taking a large number of tablets or capsules of drugs in this group. Otherwise they are relatively non-toxic agents.

Summary

Effective use of these drugs in human therapeutics requires a basic knowledge of their pharmacology and an understanding of their indications and limitations, especially from the psychiatric point of view. They are not a substitute for the doctor-patient relationship, for the type of psychotherapy which every family physician practices (often unwittingly), or for major psychotherapy. Neither are they entirely benign because they can, even when used with great caution and for the best of indications, cause very severe, often frightening, and occasionally fatal reactions. Physicians who accept them as the panacea for all "nervousness" do both the drugs and their patients a grave injustice.

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(Continued from page 118)

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Primary Aldosteronism

Report of Two Cases and Review of the Literature

ROBERT T. MANNING, M.D.; MAHLON H. DELP, M.D.; C. FREDERICK KITTLE, M.D.; ROBERT W. WEBER, M.D.; *and* FRANK C. BROSIUS, M.D., ***Kansas City***

Two cases of primary aldosteronism (Conn's syndrome) are reported. One patient received the spirolactone, SC-9420, with balance data indicating that the drug blocked the effect of aldosterone on the renal tubules. Both patients had excellent results following surgical removal of adrenal adenomas.

The literature is reviewed with respect to Conn's syndrome and 34 cases are tabulated. The most frequent presenting complaints were weakness and disturbed fluid balance. All had hypertension, low serum potassium, and diminished renal concentrating and acidifying capacity. Electrocardiograms almost always showed changes consistent with electrolyte abnormalities.

THE CLINICAL SYNDROME resulting from excessive production of aldosterone by the normal or abnormal adrenal has been well delineated. First described by Conn in 1955 at least 32 cases have been reported since his original report. This paper adds two more cases and demonstrates the results of use of the aldosterone antagonist, SC-9420,* in one case.

Case Reports

Case 1. A 43-year-old white woman was admitted for the first time on April 12, with a chief complaint of high blood pressure of 18 years duration. She had had morning headache and episodic weakness for two years. No history of cardiac, pulmonary, or renal disease was obtained except for one episode of painless hematuria the year before. Her appetite had been diminished for two years. She had had numbness and tingling of the hands several years before admission.

The patient was a well developed but thin woman without edema. The recumbent blood pressure was 210/120; standing, 220/115; and the pulse was 90. Examination of the skin showed some vasomotor instability. A grade I hypertensive retinopathy was present. The ears, mouth, and throat were negative. There was mild venous distention of the neck veins. The lungs were clear to auscultation and percussion. The heart was moderately enlarged to percussion, and there was a grade I basal, systolic murmur. Abdominal examination showed a right upper quadrant surgical scar. The liver was percussed five cm. below the right costal margin; the spleen was not palpable. The peripheral pulses were equal and 4+. The neurologic examination was within normal limits.

Laboratory: Urine specific gravity ranged from 1.004 to 1.015. All urine specimens were alkaline. There was a trace to two plus albuminuria and occasional white cells. The red cell count was 4.34 million; hemoglobin, 13.5 grams; white count 5,650 with 59 per cent polymorphonuclears, 29 per cent lymphocytes, one per cent basophils, ten per cent monocytes, and one per cent eosinophils. The VDRL was non-reactive. The serum calcium was 4.1 mEq/L; phosphorous, 1.8 mEq/L; NPN, 33 mg per cent; creatinine, 1.3 mg per cent; sugar 89 mg per cent; sodium, 144 mEq/L; potassium, 2.8 mEq/L; CO_2, 36.2 mEq/L; chloride, 103 mEq/L; and BUN, 10.5 mg per cent. Glucose tolerance revealed fasting sugar of 83 mg per cent; one hour 145, two hours 165, three hours 155, and four hours 117. Serum iron was 125 gamma per cent. The 24-hour urine contained 15 mEq. of sodium, 14 mEq. of chloride, and 10 mEq. of potassium. Urine concentration test showed maximum concentration of 1.008. The tuberculin test with PPD was negative; and the histoplasmin was positive. Urea clearance was 34 ml. per minute, maximum clearance. Urinary 17-hydroxy steroid excretion was 11.2 milligrams in 24 hours; 11-ketosteroids, 10.8 milligrams in 24 hours. Serum PBI was 6.3 gamma per cent; I^{131} uptake was 24 per cent in 24 hours. Catecholamine excretion was not increased. PSP excretion was 61.5 per cent with 20.5 per cent in 15 minutes. The LE preparation was negative. Total serum bilirubin was 0.7 mg per cent; direct, 0.1 mg per cent; alkaline phosphatase, 2.0 mM units; albumin, 4.8 gm per cent; gamma globulin, 1.5 gm

From the Department of Medicine and the Department of Surgery, University of Kansas Medical Center, Kansas City, Kansas.

* Kindly supplied by Dr. Clarence L. Gantt, G. D. Searle Co.

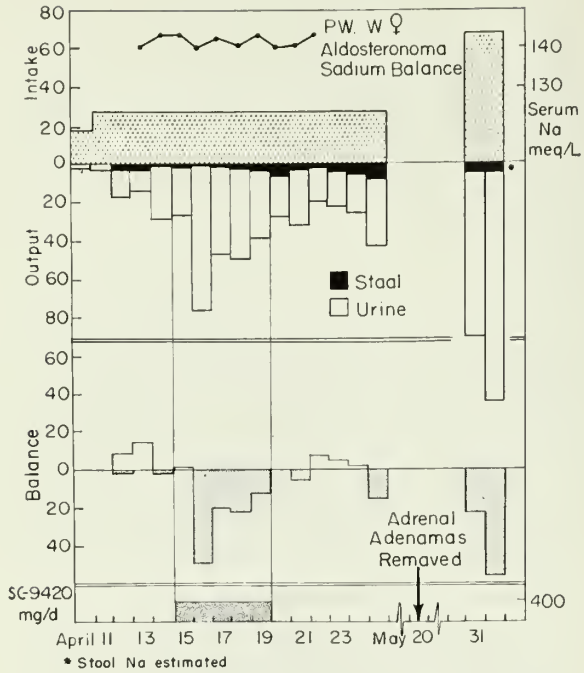

Figure 1

per cent; total cholesterol, 230 with 62 per cent esters. An electrocardiogram showed prolonged QT interval suggesting electrolyte disturbance. The chest x-ray showed cardiac enlargement with some evidence of pulmonary congestion; the fluoroscopic examination was otherwise within normal limits. An intravenous pyelogram showed normal kidney function and architecture.

Clinical Course

The patient remained relatively asymptomatic while in the hospital, and she was discharged on a 2,000 calorie, low fat, low cholesterol, 500 milligram sodium diet. In June she complained of a severe headache with nausea and vomiting, and at that time the serum sodium was 143 mEq/L; potassium, 5.0 mEq/L; chloride, 106 mEq/L. Her blood pressure was 210/120. In October she continued to complain of headaches, her weight was 125 lbs., and her blood pressure, 220/130. She was now taking potassium chloride regularly. Her serum sodium was 142 mEq/L; potassium, 3.5 mEq/L; chloride, 107 mEq/L. In May, the next year, she felt well, and was still taking potassium. She had had no muscle weakness or edema. Her blood pressure was 220/130; sodium, 140 mEq/L; potassium, 3.3 mEq/L; CO_2, 26.2 mEq/L; and chloride, 107 mEq/L. In November her sodium was 140 mEq/L; potassium, 3.7 mEq/L; CO_2, 33.0 mEq/L; and chloride, 101 mEq/L. She was referred to Dr. Jerome Conn in April, two years following first admission, and, after study at the University of Michigan Hospital, she was explored and the left adrenal with two small adenomas was removed. At that time her serum sodium was 143 mEq/L; potassium, 2.7 mEq/L; chloride, 103 mEq/L; CO_2, 30 mEq/L. She was seen in follow-up in October, at which time her blood pressure was 160/90; serum sodium was 137 mEq/L; potassium, 4.5 mEq/L; and she was asymptomatic.

Case 2. A 51-year-old housewife was admitted for the first time in April, 1958 with complaints of high blood pressure and visual loss of five years and eight months duration, respectively. The physical examination revealed her blood pressure to be 210/100, and she had a grade III hypertensive retinopathy and left cataract. Her serum sodium was 141 mEq/L; potassium, 2.8 mEq/L; chloride, 93 mEq/L; CO_2, 32 mEq/L. She was discharged on a 1400 calorie, 40 gram fat, 1650 mg. sodium diet.

No further visual impairment developed, and she admission in April, 1959, when she had a "blackout spell" followed by a severe, continuous, frontal headache. On admission she was acutely ill, her blood pressure was 220/110, her pulse was 78. There was a grade III arteriolar spasm with mild papilledema on the right. The left fundus could not be seen be-

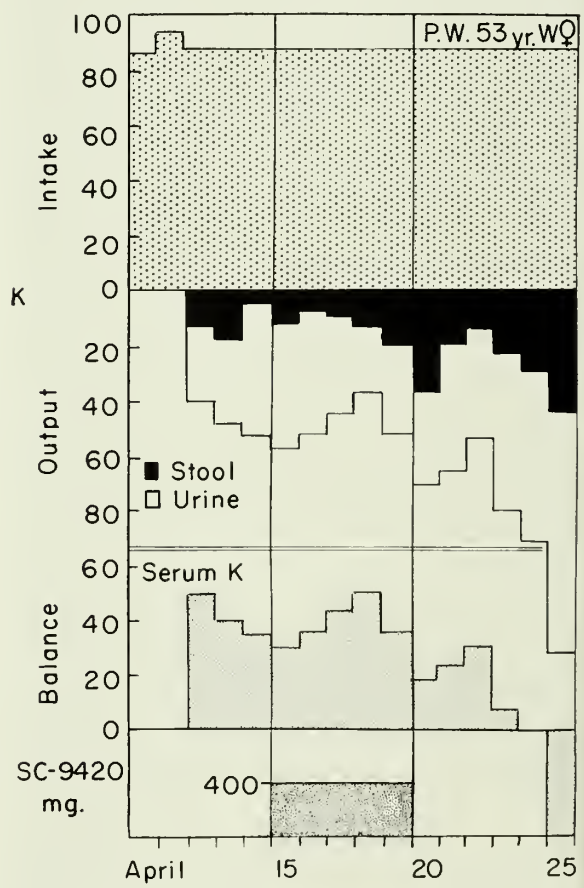

Figure 2

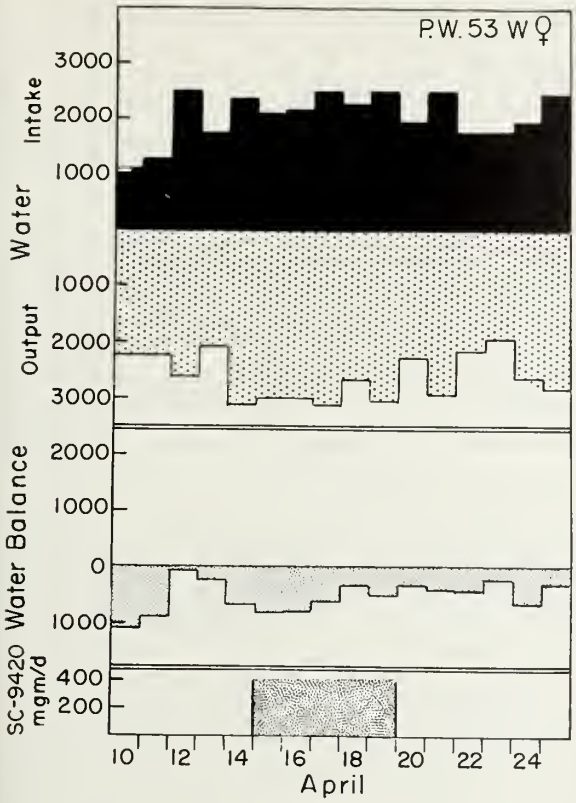

Figure 3

cause of the cataract. Mild nuchal rigidity was present. The remainder of the examination was not remarkable; there was no edema. The neurologic examination was normal except for the neck stiffness.

A spinal puncture was done showing grossly bloody fluid with an opening pressure of 240 mm.

Figure 4

of spinal fluid and a closing pressure of 140 mm. She was placed at bed rest and given a 1400 calorie, 40 gram fat, 1600 milligram sodium diet. Laboratory evaluation revealed serum sodium, 143 mEq/L; potassium, 2.2 mEq/L; chloride, 95 mEq/L; CO_2, 38.2 mEq/L; calcium, 5.2 mEq/L; phosphorous, 1.8 mEq/L. Serum albumin was 3.58 grams per cent; globulin, 2.99 gm per cent; blood sugar 76 milligrams per cent. A 24-hour urine collection revealed sodium, eight mEq; potassium, 11 mEq; chloride, five mEq. The blood pH was 7.49. On the sixth hospital day she was placed on a regular diet with four grams of sodium chloride as supplement. After three days on this diet a 24-hour urine was collected and assayed for aldosterone, and 16.1 micrograms were found (normal 1-6 micrograms). An electroencephalogram showed a borderline tracing. The EKG showed a prolonged QT interval with prominent U waves suggestive of hypokalemia. The chest x-ray was not remarkable. IVP's showed normal functioning kidneys without obvious displacement.

TABLE I

P. W. AGE 53

Measured Values (± 5%)	
Body Weight	57.27 kg.
Total Body Water (TBW)	26.20 liters
% Body Weight	45.75
24 hr. Exchangeable Body K	1690 mEq
mEq/kg.	29.5
mEq/LTBW	64.5
Sodium Space	12.53 liters
% Body Weight	22.05
24 hr. Exchangeable Body Sodium	2762 mEq
mEq/kg.	48.2
Hematocrit	40.0
Blood Volume	3640 cc.
Red Cell Mass	1398 cc.
Plasma Volume	2242 cc.

TABLE II

Derived Values (± 10%)	
Lean Body Mass	35.79
% Body Weight	62.5
Body Fat	21.48
% Body Weight	37.5
Compositional Derangement (± 10%)	
Potassium	–434 mEq deficit
Sodium	+697 mEq excess
Intracellular	+289 mEq
Sodium Space	+238 mEq
Bone Sodium	+170 mEq

Because it was believed that the patient might well have primary aldosteronism, she was given the spirolactone, SC-9420, during a balance study. Data for sodium potassium and water balance is presented in Figures one to three.

Clinical Course

Throughout the remainder of her hospitalization she continued to feel well, with a diastolic pressure range between 90 and 110 mm. of mercury. There was no recurrence of cerebral hemorrhage. Following the study period she was discharged on a 1650 milligram sodium, 1400 calorie, 40 gram fat diet and 120 mEq of potassium by mouth daily. She was readmitted on May 15 at which time there was no change in her physical examination. Her blood pressure was 180/98. Chest, heart, and abdominal examinations were again within normal limites. A urinalysis and blood count were relatively unchanged. Serum sodium was 142 mEq/L; potassium, 2.6 mEq/L; chloride, 98 mEq/L; CO_2, 39.5 mEq/L. The electrocardiogram continued to show change consistent with hypokalemia. Sodium excretion ranged between four and ten milliequivalents per 24 hours. On May 20, under nitrous oxide and fluothane anesthesia, an adrenal exploration was undertaken. The right adrenal was exposed and an adenoma approximately 1.2 cm. in diameter was palpated in its mid-portion. The entire right adrenal gland was removed by individual ligation of the blood vessels

TABLE III

CASE NUMBER	DATE	AGE	SEX	POLYURIA	POLYDIPSIA	NOCTURIA	WEAKNESS	PARALYSIS	HEADACHE	CRAMPS	EDEMA	DURATION	BLOOD PRESSURE	E K G	I V P	Retro-Peritoneal Air Insufflation
1[1]	1955	34	♀	+	+	+	+	+				8 yr.	176/104	↓ K	N	N
2[2]	1955	33	♂	+	+	+	+			+		2 mo			N	N
3[3]	1956	39	♀				+					"yrs"	220/110	↓ K		
4[4]	1956	46	♀	+			+	+				4 yr	220/115		N	N
5[5]	1956	32	♀	+	+		+						180/105		N	Tumor
6[6]	1956	43	♀				+					3 yr.	225/140	↓ K	N	N
7[7]	1956	32	♂		+		+						180/120			Tumor
8[8]	1954 1957	41	♀					+				4 yr	180/110	↓ K LUH		Tumor
9[8]	1956	60	♀						+				180/110	↓ K LUH		N
10[9]	1957	44	♂		+		+					3 yr	200/128	↓ K	N	Left Mass
11[9]	1957	63	♂		+	+	+		+			5 yr	170/100	↓ K	N	N
12[9]	1957	42	♀	+	+		+			+		"yrs"	220/110	↓ K		Left Mass
13[10]	1957	40	♂	+			+					7 yr	↑	↓ K		
14[11]	1957	26	♀	+			+					6 yr	220/130	↓ K		
15[12]	1957	33	♀				+			+		4 yr	250/100	IV Block	N	N
16[13]	1957	45	♀				+	+	+			6 yr	200/100	↓ K LAD		
17[14]	1958	40	♂								+					
18[15]	1958	27	♂	+	+							1 yr.	260/160	LVH LVS	↓ Rt. Kidney	Mass
19[16]	1958	43	♀	+	+		+		+		+	4 yr	170/100	↓ K		
20[17]	1958	47	♀				+					3 yr	175/105	↓ K	N	N
21[18]	1958	34	♀									12 yr.	230/140	↓ K		
22[19]	1958	38	♂		+		+					3 yr	175/120	↓ K	N	
23[20]	1958	49	♀										↑	↓ K		
24[21]	1959	45	♀	+	+							14 yr.		↓ K		
25[22]	1959	45	♀									5 yr.				Left Mass
26[22]	1959	50	♀				+				+	4 yr.		↓ K		Left Mass
27	1959	43	♀				+		+			18 yr.	210/120	↓ K	N	
28	1959	51	♀				+					7 yr	220/110	↓ K	N	
29[23]	1956	17	♂		+	+			+				220/150	↓ K	N	Left Mass
30[15]	1958	13	♂		+	+						4 yr.	160/120			
31[24]	1956	32									+	1 yr	160/105		N	N
32[25]	1959	52	♀													
33[26]	1957	40	♂	+		+						11 yr	230/120	LVH		Left Mass
34[27]	1955	60	♂	+	+			+				8 mo		↓ K	N	Tumor

① Superscript denotes reference in bibliography, 1-28 adenomas, 29-32 hyperplasia, 33-34 carcinomas

TABLE IV

Case No.	*BUN mg. %*	*Urea*	*GFR ml/min.*	*RPF ml/min.*	*Max. Concentration*	*Urine pH*	*Blood pH*
1	33-38	*1	Creatinine = 125-170 liters/day		1.011		7.62
2							7.5
3					1.010		
4					↓		
5					1.010		7.57
6					Isosthenuria	impaired acidification	
7							7.59
8		58%	65 Creatinine		Isosthenuria		
9	35		65 Creatinine		1.016		
10	42	93-97%	120 Inulin	412			
11	34				1.011		7.5
12	21	60-80%					7.5
13					↓	impaired acidification	
14					1.012		
15					1.024		7.54 7.47
16			98 Creatinine		1.011	7.1-7.3	7.46
17							
18			108 Inulin		*2		
19		PSP 70% 2 hrs.			1.012		7.42 7.44
20	14-35	66%			1.020	impaired acidification	
21							
22						6.0-8.0	
23					↓		
24			73 Creatinine 60 Mannitol	350		7.65	
25							
26						alk.	
27	10.5	*3			1.014	7.5	
28	7.5					alk.	7.49
29		PSP 80% 2 hrs.	96 Creatinine		1.016	6.9-7.1	7.44
30		PSP 63%			1.014		
31					1.011		
32							
33	38	87	78 Creatinine		*4		
34							

*1-PSP
50%-15 min.
80%-2 hrs.

*2-1.010 H_2O
water deprivation
535 Mos. m/kg.

*3-34 Max.
PSP, 20.5-15 min.
61.5-1 hr.

*4-1.012
with pit.
540 mOsm/l.

TABLE V

Case No.	*Aldosterone (mcg/day)*	*17 Hydroxycorticoids (mg/day)*	*17 Ketosteroids (mg/day)*	*Other*
1		5.0	5.7	
2				
3				
4				
5	3-28			
6	8, 11, 28	40.35 21		
7		5.8	17.2	
8	↑	N	N	
9	N	N	N	
10	27.5 N 26		12	
11	48.5	10.6	4.5	
12	230 DCA equiv. (4 × N)			
13	38.3, 28.4 (N 5-23)	21, 16.4 (N 13-86)		Comp. B 0.82 (N 2.2-9)
14	28	3.5	N 7.5	
15				
16	9.6, 30.4, 9.2, 16.0, 22.0, 35.0		7.5	
17	60			
18	39-41 (N 5.8-11.1)	19		
19				
20	1.8-6.7 (N 3-7)			
21	↑			
22	19.8, 26 (N 3-9)		10	
23	32, 56, 105, 73, 47			
24	11-25 (N<12)	high N	low N	NoS, Tetrahydros N
25	80	N		11 = Oxysteroids N
26	24	N		11 = Oxysteroids N
27			11.2	11 = O, 16.8
28	16 (N<6)	4.9	5.8	
29	34 (N<8)			
30	8, 5, 5, 12, 33	5.5		
31	300	37	11	Comp. B 24 (N.08-.12) Hydrocortisone 1 (N.04-.26)
32			N	
33	20, 20, 30 (N 2)	29, 25, 33		
34	12 DCA equiv. (r = 4.8)			

N = Normal

medially. The cut section revealed a firm, well circumscribed cortical adenoma with a satellite adenoma approximately four mm. in diameter. The incision was closed, and the patient was returned to the recovery room.

Following surgery the serum potassium gradually rose, and at the time of discharge the serum electrolytes were: sodium, 134 mEq/L; potassium, 4.7 mEq/L; chloride, 98 mEq/L; CO_2, 25.2 mEq/L. Urinary electrolyte excretion of sodium increased on successive days to 20, 106 and 66 mEq per 24 hours. Her 48-hour postoperative balance is shown in Figure one.

Preoperative data on the patient's total body sodium, potassium and water are shown in Tables one and two. She has remained well since surgery, her blood pressure dropping to 130-140/80-90. At the time of the postoperative follow-up in October, 1959, the serum sodium was 138 mEq/L; potassium, 4.7 mEq/L; chloride, 98 mEq/L; and CO_2, 23.8 mEq/L. The tumor and incision are shown in Figure four.

Experimental Methods

During the study period the patient received the same diet each day. A duplicate tray was analyzed and found to contain 94 mEq of potassium and 27 mEq of sodium. Assay was performed by homogenizing the duplicate diet with de-ionized water; triplicate aliquots were digested with .75 normal nitric acid, filtered, and the supernate analyzed for sodium and potassium utilizing a Coleman Model 21, flame photometer attached to a Model 14 Universal spectrophotometer for reading. Serum and urinary electrolytes were determined utilizing the same machine by standard methods. Stool specimens were collected, weighed and frozen until assay. Samples were homogenized and weighed aliquots were assayed after digestion with nitric acid as described in the Coleman Manual D-248-B, Coleman Instrument Company. Blood pH was determined on heparinized finger-tip blood with a Sanz microelectrode (type EA-518) attached to a Cambridge model research pH meter. A Gebruder-Haake type F constant temperature bath was used to maintain electrode temperature at 38 degrees centrigrade. Aldosterone assay was performed by Dr. Robert Bolinger, utilizing methylene chloride as the extracting medium. The samples were chromatographed in the Bush C system and the aldosterone was estimated utilizing Gornall's color method with dinitrophenylhydrazine. Body water, sodium and potassium were determined by Dr. Paul Schloerb using sodium 23, potassium 42 and deuterium oxide dilution techniques.

Discussion

Thirty-two cases of aldosterone excess collected from the literature[1-27] are tabulated with the two cases presented here in Tables three, four, and five. Twenty-eight of these patients had adrenal adenomas of which seven were on the right and 19 were on the left; two were not reported as to location. Four had hyperplasia alone and two had adrenal carcinomas. The more common complaints are graphed in Figure five. Four patients had had some degree of edema.

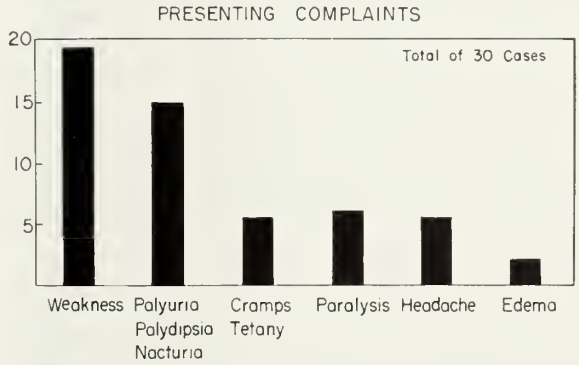

Figure 5

All patients had hypertension and most showed electrocardiogram changes consistent with hypokalemia. Intravenous pyelograms did not contribute to the diagnosis whereas retroperitoneal air study frequently demonstrated a tumor mass (11 of 20). All showed at least one serum potassium that was abnormally low, and many showed increased sodium and increased CO_2 content.

Hyposthenuria was a consistent finding as was impaired urinary acidification with excretion of an alkaline urine. Other aspects of renal functions are noted in Table four.

Urine steroid excretion data are tabulated in Table five. Because of considerable variation between laboratories in aldosterone assays, normal values are given for each report where known. Consistent elevation in aldosterone excretion is noted, with the majority showing 17-hydroxy and 17-ketosteroid excretion in the normal range. Unusual in this respect were cases 24 and 31.

Left-sided tumors were almost three times as frequent as those on the right side. No extra-adrenal lesions have been reported to date. With this in mind it would seem best to use the posterior approach because of its technical facility as compared to abdominal exploration.

Effect of Spirolactones

Salass, Mattox, and Powers, and Kistler, Shelley, and Frawlery, have reported on the use of a spirolactone in patients with primary aldosteronism. The

(Continued on page 188)

Chronic Gastric Volvulus

Symptoms of Epigastric Pain and Emesis

CREIGHTON A. HARDIN, M.D.; ***and***
COLVIN H. AGNEW, M.D., ***Kansas City***

GASTRIC VOLVULUS IS a rare condition capable of producing an acute abdominal crisis. Berti recognized and described this condition. Berg treated such a case by operation, and Rosselet described its roentgen appearance. A review of the literature by Gottlieb, Lefferts, and Beranbaum added 20 cases.

Acute or Chronic

Gastric volvulus may be either acute or chronic. Acute gastric volvulus should be considered a surgical emergency. Volvulus proves fatal unless a clinical awareness exists, and a prompt diagnosis is made, followed by proper surgical treatment. Borchard presented a clinical triad of symptoms consisting of vigorous vomiting without relief, epigastric pain with radiation to the back and inability to pass a stomach tube.

By definition acute gastric volvulus should be reserved for those patients presenting with an acute unrelenting obstruction. Hazards of acute volvulus are ischemia of the stomach with gangrene and aspiration of vomitus. Successful surgical treatment of acute gastric volvulus in a 22-month old infant has been reported by Goldberg and Smith while most of the cases described in the literature have been in adults. The collective mortality of his reviewed series of 48 cases was 60 per cent.

Chronic or intermittent gastric volvulus is more common than the acute form, and does not bear such an immediate serious prognosis. Clinically the symptoms of epigastric pain and emesis are periodic. The rotational obstruction is intermittent and when reduced a stomach tube may be passed. A more descriptive term of organo-axial rotation has been suggested for chronic gastric volvulus.

Case Report

A 58-year-old white man was admitted to the University of Kansas Medical Center on December 27, complaining of epigastric pain radiating posteriorly between his shoulders. The onset of pain abruptly began soon after meals, and was so intense as to double him up. Severe vomiting gave relief to these painful attacks. Present episodes began about two months before admission, and occurred every three to four days. There was no history of jaundice, hematemesis, or melena. A past history of seven years was replete with repeated bouts of pain similar to those on admission. Yearly barium studies of the stomach failed to demonstrate a gastric or duodenal ulcer. Non-specific findings of a hyperirritable duodenal bulb and delayed gastric emptying were described by the radiologist. Gallbladder series were done on two occasions and reported as normal. Since 1955 the patient had been treated medically with a low fat bland diet, antispasmodics, and antiacids. Relief at best on such a program was intermittent,

A case of chronic intermittent gastric volvulus successfully treated by gastric resection is presented. The clinical symptoms, important roentgen findings, and treatment is reviewed.

Figure 1. Normal appearing stomach in February 1956.

From the Departments of Surgery and Radiology, University of Kansas Medical Center, Kansas City, Kansas.

punctuated every three to four months by recurrent bouts of acute pain and vomiting. Studies of gastric acidity with histamine stimulation on two occasions were normal. Physical examination was essentially negative except for epigastric tenderness and moderate distension of the upper abdomen.

A blood count and urinalysis were normal. An electrocardiogram was normal. Serum amylase and leucine amino pepidase values were normal.

Radiographic and fluoroscopic studies with barium showed an abnormality present in the mid-portion of the body of the stomach. The stomach, visualized in the right anterior and frontal views, showed the proximal one-half of the stomach rotated on itself. The proximal stomach had undergone organo-axial rotation producing a partial obstruction. Two levels of layered air and fluid were seen in the obstructed stomach *(Figure 2)*. A repeat barium study 24 hours after continuous gastric suction showed the obstructing rotation reduced *(Figure 3)*. The gastric emptying was delayed but considerable retained fluid was present. No hiatal hernia could be demonstrated.

Preparation for surgery consisted of continuous gastric suction and intramuscular atropine every six hours. This regimen was carried out for 48 hours, and provided symptomatic relief.

The patient was explored under general anesthesia on the third hospital day. The liver, gallbladder, and intestines were normal. There were no ulcers in the duodenum or stomach. The organo-axial rotation of the proximal stomach could be reduplicated manually. A deficiency in the mesenteric attachment along the greater curvature of the stomach beginning at the lower pole of the spleen allowed the rotation to take place. A 50 per cent Billroth I gastrectomy and vagotomy was done. The postoperative course was uneventful, and the patient was discharged seven days after surgery.

Examination of the excised segment of stomach showed many acute superficial scattered ulcerations probably secondary to the intermittent partial obstruction.

Discussion

A useful topographical classification of volvulus has been presented by von Haberer and Singleton.

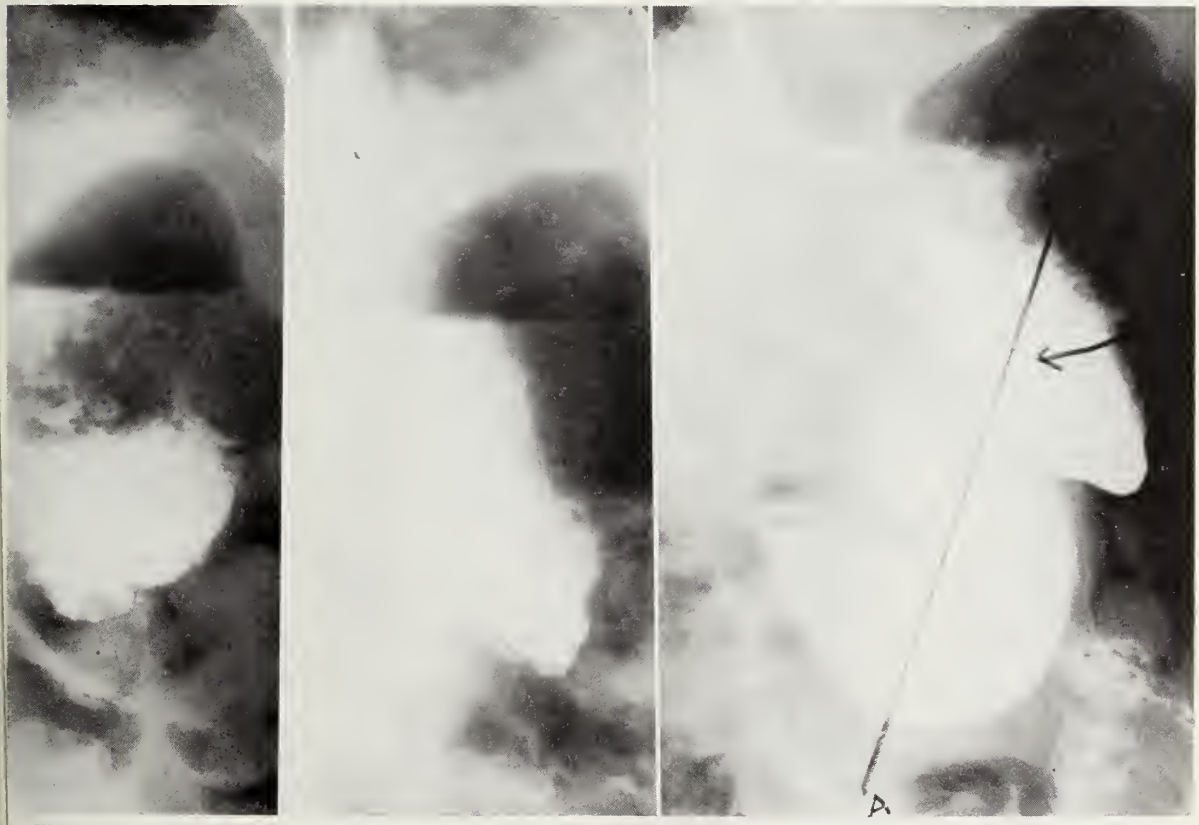

Figure 2A. Initial barium sulfate administration demonstrates the double fluid level. The barium sulfate was temporarily obstructed at the area of twisting. As additional barium was given (B) this area relaxed to outline the antrum.

Figure 2C. The filled stomach with the axis of rotation (A-B) showing the cardia rotating from left to right. No diaphragmatic hernia could be demonstrated.

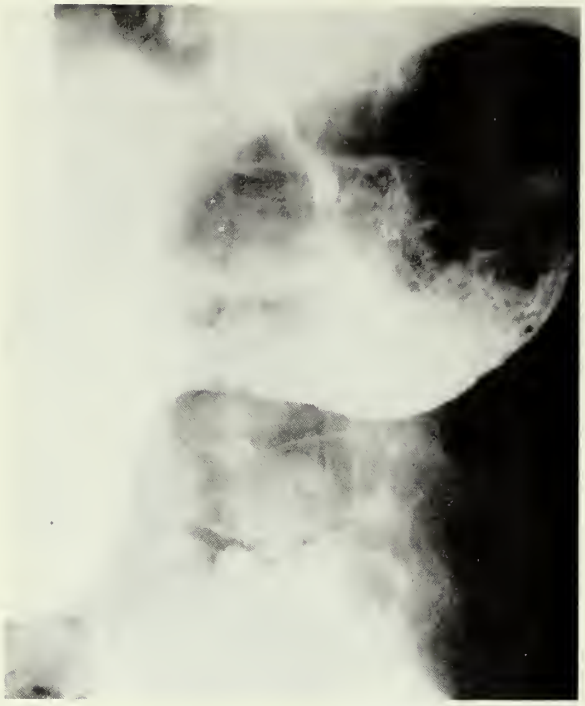

Figure 3. The filled stomach viewed from the left anterior oblique. The area of twisting is well shown. The air-filled splenic flexure is superimposed upon the body of the stomach.

I. Type
(a) organo-axial: infra- or supracolic rotation of the stomach around the long axis of the stomach
(b) mesentero-axial: rotation of the stomach from right to left, or left to right along the long axis of the gastrohepatic omentum.

II. Extent
(a) total-cases in which the whole stomach except the diaphragmatic attachment rotates
(b) partial-instances in which the rotation is segmentally limited, usually the pyloric portion.

III. Direction
(a) anterior-cases in which the rotating part passes forward
(b) posterior-cases in which the rotating part passes backward.

IV. Severity
(a) acute-form presenting as an abdominal emergency
(b) chronic-form presenting with constant or recurrent milder symptoms or symptomless.

To understand the process of gastric volvulus, a certain atony or lengthening of peritoneal fixations must occur in the gastrosplenic, gastrophrenic, hepatogastric, and gastroduodenal ligaments with some degree of ptosis of the stomach. The omental fixation of the transverse colon is also a contributory factor because the colon may rotate with the stomach. Secondary contributory factors, listed by Payer, are diaphragmatic hernia or eventration, benign and malignant tumors, peptic ulcers, and displacement by neighboring organs.

A clinical suspicion of the triad of symptoms should be followed by confirmatory x-ray examination. Supine and erect abdomen films may complete the diagnosis. In acute complete volvulus there is no passage of barium sulphate. Unusual amounts of colonic gas have been noted in the transverse colon and splenic flexures. A double fluid level may be seen with barium swallow in the incomplete partial volvulus. When more barium is given and films are taken in the erect position the direction of torsion becomes more apparent. Recumbent films may be complementary but fail to yield information leading to the diagnosis.

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Nail Growth

Rapidity of nail growth varies considerably among individuals, but in a given person generally is relatviely constant throughout life. Growth is increased, however, in nail biters and during pregnancy; it is decreased by acute infections, chronic disease and malnutrition, reports Dr. Maarten S. Sibinga of New York University, N. Y. Measles arrests nail growth for variable periods. Retardation of nail growth sometimes accompanies the common cold, the period of elevated temperature of mumps and infections severe enough to cause weight loss.—*Modern Medicine,* Nov. 15, 1959.

K.U.M.C. Cancer Registry

A Record of Cancer Cases Over the Past Twelve Years

ROBERT E. STOWELL, M.D., ***Washington, D. C.***

The objectives and plan of operation of the tumor registry and follow-up service at the University of Kansas Medical Center are presented. Data on 9,823 cancer cases have been coded in the registry in the past 12 years. The registry has aided in the improvement of service to cancer patients, statistical research, and cancer teaching for the State of Kansas.

IN 1949 THE TUMOR registry and follow-up service was established to serve the University of Kansas Medical Center. Cancer cases for 1947 and 1948 were subsequently added to the registry. For a variety of reasons it seems desirable to report on the results of its first 12 years' operation. An account of this registry has not been previously published although it has been discussed at national cancer meetings and has supplied useful information on its operation to numerous other institutions establishing registries.

Objectives of Registry

A university medical center exists for teaching, patient services and research, and a tumor registry and follow-up service at a medical center should serve all these needs. In establishing any tumor registry, it is important to ascertain the specific objectives and the available facilities which can be used to meet these needs. The optimal type of registry for different situations will vary greatly. In a university medical center, the purposes include: to obtain factual information on the incidence and results of therapy of all cancer cases within the institution; to aid the patient, physicians, researchers, and medical students; and to improve patient care, research and teaching. Generally, such registries should include only simple basic data which will serve as a guide to finding the cases on which more detailed research will be done. The accuracy of data collected is of much greater significance than the total number of cases or the amount of information obtained.

The keeping of systematic records on cancer patients has increased greatly during the past 20 years. The requirements of the American College of Surgeons for approval of a cancer program encourage more hospitals to establish tumor registries. Haenszel and Hon have discussed the various statistical approaches to cancer including analysis of mortality data, retrospective studies, forward study of cohorts, morbidity surveys, screening of populations, and cancer registers. They discuss the relative merits of registries maintained by state departments of health and by other institutions. All states and all hospitals do not need cancer registries. The establishment of a registry is an expensive undertaking which must be maintained for many years to become valuable. The critical question is whether such expenditures are more warranted than other utilizations.

Plan of Operation

The registry at the University of Kansas has cooperated closely with that of the Kansas State Board of Health, although objectives have been quite different. At the University, the registry and follow-up service has been under the general supervision of the chairman of its Department of Pathology and Oncology and its cancer committee. Fortunately, several physicians have had a substantial interest in the success of the registry. Throughout most of its existence one unusually competent tumor registry librarian with two secretarial assistants has handled routine operational details and maintained desired liaison with the record room and clinical staff. With a unified central record system, all patients on whom a diagnosis of cancer has been made have their charts checked by registry personnel when they are returned for filing to the record room. Charts on which cancer has been diagnosed are stamped on the cover sheet with a red star for quick future identification.

Pertinent data are kept on IBM cards. The basic, nonscientific information is obtained on coding sheets by the tumor registry secretary. The initial medical data are recorded independently by both the registry

From the Department of Pathology and Oncology, University of Kansas Medical Center. Registry is supported by a grant from the American Cancer Society, Kansas Division, and grant CT495 from the National Cancer Institute, Public Health Service. Present address of author is Armed Forces Institute of Pathology, Washington 25, D. C.

secretary and the clinical resident on the service. Duplicate IBM cards are made from each source, verified and pertinent information such as the diagnosis typed on the face of the card for convenient reference. There is good relationship with staff as well as referring physicians in obtaining follow-up information at six months intervals for the first five years and annually thereafter. If information needed is not available on the patient's chart, an autotypist is used to automatically prepare original copy, individualized follow-up letters to the patient or referring physician. The success of follow-up on the first 10,000 cases is better than 98 per cent. A separate file card marked for month of follow-up is kept and a new IBM card is punched to provide the latest information on each case. Tumor classification is made by a slightly modified standard nomenclature of diseases.[8]

About a sixth of the cases of cancer in this state at some time enter the University of Kansas Medical Center and are incorporated in this registry, which is one of about 30 institutional registries in Kansas. The central registry of the State Board of Health is advised of all new cases and furnished a tabulated annual report from which information can be incorporated with that of other institutional registries. The Board of Health gives some assistance in follow-up information including copies of death certificates.

Results

The patients appreciate the interest shown in them during follow-up and are encouraged to regularly see their physicians. The registry fosters better patient treatment. The facilities of the registry are used by faculty, residents and students for obtaining information and for doing research on symptomatology, diagnosis, treatment and prognosis of cancer patients. Recently for example, epidemiological studies on cancer of the lung and stomach have been aided. The IBM facilities are also used for a variety of other statistical research problems.

Between January 1947 and December 1958, 9,160 cases were registered, and other surviving previous cases were added to comprise 9,823. Age distribution for main sites is shown in *Table 1*. Some information as to percentage distribution of site, stage and microscopic proof of diagnosis is given in *Table 2*. The percentage of localized tumors was less than one per cent for lymphatic and hematopoietic tissues,

TABLE 2

PERCENTAGE DISTRIBUTION OF 9,823 CANCER CASES BY SITE, STAGE OF DISEASE AND MICROSCOPIC PROOF OF DIAGNOSIS

Site	*% Total Cases*	*% Localized*	*% Microscopic Proof*
Buccal cavity and pharynx	6.0	45.2	96.9
Digestive organs	15.8	21.0	94.5
Respiratory system	9.5	15.1	91.9
Breast	10.0	34.5	96.2
Female genital organs	13.7	33.1	98.7
Male genital organs	7.5	20.8	86.2
Urinary organs	4.9	43.7	94.6
Skin	8.8	73.6	91.9
Brain and nervous system	4.0	47.6	93.2
Lymphatic and hematopoietic	12.2	.3	97.1
Other and unspecified	7.6	22.6	90.6
Per Cent Total	100.0	29.3	94.3

TABLE 1

CANCER CASES REPORTED BY SITE AND AGE GROUP

		Age Group															
Site	*Total*	*0*	*5*	*10*	*15*	*20*	*25*	*30*	*35*	*40*	*45*	*50*	*55*	*60*	*65*	*70 and Over*	*Not Stated*
Buccal cavity and pharynx	588	1	2	6	7	8	11	11	20	22	36	40	75	66	95	187	1
Digestive organs	1552	7	1	2	4	8	12	29	36	46	82	112	173	249	287	504	0
Respiratory system	940	3	0	2	3	2	3	11	14	48	90	131	166	160	165	142	0
Breast	989	0	0	0	0	0	12	24	53	88	131	131	111	138	130	168	3
Female genital organs	1341	1	0	1	4	12	35	78	94	130	166	188	182	165	131	153	1
Male genital organs	739	2	0	0	5	0	14	9	7	6	9	18	39	61	149	419	1
Urinary organs	481	17	3	0	0	1	8	4	8	15	25	40	55	72	85	148	0
Skin	861	0	0	0	4	1	10	15	24	26	37	57	73	108	149	354	3
Brain and nervous system	397	27	33	21	15	17	12	20	26	29	32	50	48	34	21	12	0
Lymphatic and hematopoietic	1188	93	55	34	45	35	28	43	39	62	94	118	103	110	142	185	2
Other and unspecified	747	44	13	23	23	24	19	27	36	35	60	55	78	97	84	128	1
Total	9823	195	107	89	110	108	164	271	357	507	762	940	1103	1260	1438	2400	12

and 74 per cent for skin. Nearly 95 per cent of the diagnosis were confirmed microscopically. The percentage of microscopic proof of diagnosis was higher than obtained in many registries.[4]

OCCUPATION AND DIAGNOSIS

Indoor work was performed by 6,680 and 1,102 were farmers. Slightly less than four per cent of patients were unaware of cancer symptoms, of which

TABLE 3

STAGE OF DISEASE OF REGISTERED CASES BY YEAR OF FIRST DIAGNOSIS, 1947-1958

		Per Cent of Total				
Year	*Number of Patients*	LOCALIZED	REGIONAL INVOLVEMENT	REGIONAL NODES INVOLVED	DISTANT METASTASIS	STAGE NOT RECORDED
1947	427	36.1	22.2	15.0	12.2	14.5
1948	511	27.8	22.7	17.8	12.5	19.2
1949	609	32.5	21.2	16.3	12.0	18.0
1950	795	35.6	18.1	18.0	7.9	20.4
1951	848	33.6	17.7	14.9	12.5	21.3
1952	832	32.5	18.5	15.0	12.1	21.9
1953	860	27.2	22.8	15.7	13.1	21.2
1954	830	29.7	21.9	14.1	15.4	18.9
1955	846	26.4	21.0	14.3	18.8	19.5
1956	834	24.3	21.1	15.7	16.1	22.8
1957	865	30.2	22.0	13.5	13.6	20.7
1958	903	28.8	21.1	15.8	11.8	22.5
Total	9160	30.1	20.8	15.4	13.3	20.4

TABLE 4

TYPE OF TREATMENT GIVEN DURING FIRST ADMISSION IN REGISTERED CANCER CASES BY SITE, 1947-1958

		Therapy							
					CHEMOTHERAPY				
Selected Sites	*Number of Patients*	SURGERY	RADIATION	SURGERY AND RADIATION	ALONE	WITH SURGERY	WITH SURGERY AND RADIATION	WITH RADIATION	*None*
Buccal cavity	537	39.8	36.3	18.1	0.2	0.7	0.2	0.6	4.1
Digestive organs	1516	68.8	1.9	2.4	1.9	2.4	0.1	0.3	22.2
Respiratory system	926	33.7	19.0	5.7	5.6	1.2	0.0	4.1	30.7
Breast	813	44.5	3.1	36.3	0.6	2.8	8.9	2.0	1.8
Female genital organs	1191	12.8	57.3	22.4	0.5	0.4	1.2	2.1	3.3
Male genital organs	722	14.1	0.8	5.1	8.1	65.9	2.2	0.3	3.5
Urinary organs	459	56.6	7.6	16.8	2.6	2.0	1.3	0.2	12.9
Skin	747	65.6	16.1	15.4	0.1	1.2	0.4	0.1	1.1
Brain and nervous system	378	45.5	10.6	22.2	0.8	0.0	0.3	0.3	20.3
Lymphatic and hematopoietic systems	1163	1.5	23.2	3.8	46.5	0.4	0.9	14.6	9.1
Unspecified	708	32.3	19.1	18.8	5.2	0.8	0.6	3.0	20.2
Total	9160	36.6	18.7	13.5	8.1	6.4	1.4	3.1	12.2

2.5 per cent were recognized as a result of routine examination; in 1 per cent cancer was found as a result of an operation or other medical procedure not undertaken because of a diagnosis of cancer, and 0.3 per cent were found as a result of an exfoliative smear made as a routine screening procedure. Exfoliative cytologic diagnosis is not as widely used in Kansas as in many other areas, although its use is increasing.

TABLE 5

ONE, THREE AND FIVE-YEAR SURVIVAL RATES FOR SELECTED SITES OF CANCER BY STAGE, 1947-1953

Site and Stage of Disease	*Number of Patients*	*Per Cent Surviving* 1 YEAR	3 YEARS	5 YEARS
Buccal Cavity				
Localized	167	88.0	67.1	56.3
Regional involvement	72	76.4	51.4	31.9
Node involvement	59	54.2	18.6	13.6
Distant metastasis	8	25.0	12.5	0.0
Stage not recorded	20	85.0	40.0	30.0
Digestive System				
Localized	202	75.2	58.9	43.1
Regional involvement	144	51.4	29.2	22.2
Node involvement	192	44.8	19.3	14.6
Distant metastasis	217	12.0	0.9	0.0
Stage not recorded	61	62.3	27.9	16.4
Respiratory System				
Localized	61	68.9	42.6	31.1
Regional involvement	151	42.4	24.5	18.5
Node involvement	130	31.5	9.2	6.9
Distant metastasis	53	3.9	0.0	0.0
Stage not recorded	44	27.3	15.9	11.4
Breast				
Localized	179	95.0	83.2	66.5
Regional involvement	22	100.0	86.4	68.2
Node involvement	208	81.7	56.2	42.8
Distant metastasis	22	77.3	4.5	0.0
Stage not recorded	70	80.0	70.0	48.6
Female Genital Organs				
Localized	231	92.2	78.4	70.1
Regional involvement	185	79.5	55.7	43.8
Node involvement	103	68.0	40.8	32.0
Distant metastasis	113	38.9	12.4	8.8
Stage not recorded	80	82.5	53.8	37.5
Male Genital Organs				
Localized	114	83.3	52.6	43.0
Regional involvement	170	74.1	51.2	33.5
Node involvement	11	81.8	9.1	9.1
Distant metastasis	40	45.0	30.0	12.5
Stage not recorded	29	79.3	48.3	34.5
Urinary Organs				
Localized	115	80.9	58.3	47.8
Regional involvement	76	51.3	19.7	11.8
Node involvement	8	12.5	12.5	12.5
Distant metastasis	32	25.0	3.1	3.1
Stage not recorded	10	50.0	40.0	40.0
Skin				
Localized	336	92.0	73.2	61.3
Regional involvement	49	77.6	53.1	38.8
Node involvement	17	52.9	23.5	17.6
Distant metastasis	5	40.0	0.0	0.0
Stage not recorded	16	100.0	81.2	56.2

It is of interest that it was claimed that there was an elapse of less than six days in 30 per cent of cases from the time of onset of symptoms to the first visit to a physician, in 35 per cent of cases from first visit to a doctor to date of definitive diagnosis, and in over 80 per cent from definitive diagnosis to date of first treatment. Similarly the figures for less than 28 days are 40, 60, and 95 per cent respectively. If correct, this would represent relatively prompt visits of patients, to physicians who made early diagnosis and gave prompt treatment.

TUMOR STAGE AT ORIGINAL DIAGNOSIS

At the time of original diagnosis, the stage of malignancy was localized in only 3,108 cases, invasion into surrounding tissue in 1,994, metastases to regional lymph nodes in 1,605, generalized in 1,618, and unknown in 1,604 cases. The stage of the tumors when first seen at the medical center is shown by years in *Table 3*. There is no significant trend over these 12 years toward a higher or lower percentage of patients with localized or metastatic cancer. Such data on principally referred patients are a selected sample which might not reflect improved earlier diagnosis within the area. Other studies of states have shown an increasing incidence of diagnosis of localized tumors.[4]

MULTIPLE TUMORS

As to the number of cases with more than one tumor of any type, there were two tumors in 310 cases, three in 32, and four to ten in 17 cases. In 75 patients there were two identical multiple tumors, in ten cases three, and in 12 cases four or five identical tumors. At last follow-up there were 30.2 per cent of patients symptom free of their cancer, 5.3 per cent ill with symptoms of cancer, 0.2 per cent alive but condition unknown; 54.7 per cent had died presumably of their cancer, 8.6 per cent died apparently of a cause other than the cancer coded, and 0.8 per cent died of causes unknown.

TREATMENT

The types of treatment given during their first admission to the medical center for groups of tumors are given in *Table 4*. One-fifth and one-third respectively of cases of tumors of the digestive and respiratory organs received no treatment. Surgery alone was the principal initial treatment of all groups of malignant tumors except those of the female genital system (radiation), male genital system

(Continued on page 180)

Special Speech Education

Remedial Speech and Hearing Instruction in Kansas

RALPH L. SHELTON, JR., Ph.D., *Kansas City*

RECENT ARTICLES IN THE JOURNAL OF THE KANSAS MEDICAL SOCIETY suggest that Kansas physicians might be interested in knowing more about special educational procedures currently available to some Kansas residents who have faulty speech or hearing. These services, which are available in many of the universities and public schools in the state, involve the application of learning principles[5, 9] in teaching persons more acceptable speech patterns or how to use residual hearing more effectively.

Trained Personnel

The persons who provide this instruction have been variously termed speech correctionists, remedial speech instructors, speech therapists, speech pathologists, and audiologists. These terms partially reflect differences in professional training, and the latter two titles are reserved by many people for specialists holding doctorate degrees (Ph.D., Ed.D., or Sc.D.); at least 14 such persons are currently employed in Kansas. The speech pathologist is skilled in the appraisal of speech deficiencies and in their remediation or in research into speech and related subjects. The audiologist is skilled in the measurement of hearing as well as in educational procedures or research.

Speech and Hearing Association

Persons engaged in speech and hearing education are represented by the American Speech and Hearing Association, a professional organization founded in 1925. Members of the Association honor a comprehensive code of ethics. This group now publishes three journals including the *Journal of Speech and Hearing Disorders* and the *Journal of Speech and Hearing Research* which contain literature of a quality appropriate to the best traditions of laboratory research. With the development of speech and hearing as an independent but responsible profession has gone the discovery of new knowledge about speech and the speech learning process.

While most speech and hearing work in this country is done in university speech departments and in public schools, some instruction is offered in other settings including medical centers. Regardless of where the service is provided, the client's speech or hearing is compared with established norms, environmental etiological factors continuing to effect speech are identified and altered when possible, and lessons are planned to correct the speech. Many speech and hearing specialists require that their clients be examined by a physician before they undertake evaluation or training.[7] Developmental and other factors known to the physician may be related to some speech defects.

Research Setting

Perhaps the greatest cooperation between speech and hearing specialists and members of the medical profession has developed in research settings. Physicians have contributed to research projects and scientific reports formulated by speech and hearing personnel,[3, 10] and members of each group have cooperated in investigations into the anatomical-physiological bases of speech.[2, 11, 12]

Some of the special educational procedures currently available to Kansas persons who have faulty speech or hearing are discussed.

Five to Ten Per Cent

The high incidence of speech disability—five to ten per cent of the school children have speech defects serious enough to require instruction[6]—combined with a scarcity of remedial speech instructors has resulted in the hiring of some inadequately trained persons and corresponding development of conflict between such persons and members of other professions. However, it is more common for persons engaged in remedial speech and hearing work to hold advanced degrees. College graduation is required for membership in the American Speech and Hearing Association, and 50 per cent of the members held master's degrees. An additional 28 per cent have received their doctorates. The medical practitioner may find it helpful to refer his patients who present speech or hearing problems to the uni-

From the Department of Hearing and Speech of the University of Kansas Medical Center, Kansas City, Kansas.

versity speech and hearing centers or to some public school districts for evaluation and instruction.*

Handicaps Amenable to Training

Speech handicaps amenable to training include stuttering, some voice problems, delayed speech or language development, and speech problems associated with hearing loss, cerebral palsy, cleft palate, and other physical disabilities. Remedial speech and hearing instructors may choose to specialize and thus not undertake work with persons presenting certain of these problems. However, any qualified instructor can conduct training for persons with the most prevalent speech defect, faulty articulation. Articulation defects include the omission or distortion of sounds or the substitution of one sound for another.

In conclusion, it is emphasized that procedures of remedial speech instruction are founded on learning principles which were established by observation of organisms' behavior in experimental situations. Infrequent use is made of the theories of motor learning which are fundamental to physical therapy.[4]

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* The American Speech and Hearing Association periodically publishes a directory describing the education and employment of each member as well as the certification they hold within the Association. In 1958, 74 members worked in Kansas. Information regarding speech and hearing services may be obtained through the speech departments of various Kansas universities and also from James McLean who is state supervisor of speech and hearing services in the public schools. He may be contacted at the Division of Special Education in the State House, Topeka.

Cancer Registry

(Continued from page 178)

(surgery and chemotherapy) and those of the lymphatic and hematopoietic system. Of this latter group, 63 per cent had chemotherapy alone or in some combination, and 42 per cent had radiation in some form. In the earlier years of this period, chemotherapy was not used as much as recently.

Survival Rates

Somewhat more detailed information as to survival rates for some selected sites of cancer is given in *Table 5*. Patients with tumors of the respiratory tract had low survivals. The survival rates are low for most tumors with distant metastases. A third or more of the patients with lymph node metastases from cancer of the female genital organs and breast survived five years or more. The survival figures for breast were better than for skin tumors; many of the latter were complicated when first admitted. Further information can be obtained from the annual reports of the registry or by consulting the tumor registry itself.

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Oral Cancer Increases in Women

Oral cancer is on the increase among women, according to a study of the records of the Cook County Hospital (Chicago) and the Research and Educational Hospitals of the University of Illinois. In 1930 the ratio of women to men for oral malignancy was as follows: carcinoma of the lip, 1 to 16.2; floor of the mouth, 1 to 18.8; of the buccal mucosa, 1 to 8.5; of the esophagus, 1 to 4.1. In the period 1953 to 1957 at Cook County Hospital there were 46 women and 210 men patients with cancer of the month, a ratio of 1 to 4.56. At the Research and Educational Hospitals the incidence of oral cancer in 1944-48 was in the ratio of 1 to 10; in 1954-58 the ratio of women to men was 1 to 4.71. "This increased incidence in women is associated with an increasing use of tobacco by women and suggests a causal relationship. A long duration of exposure to the use of tobacco prior to onset of symptoms is a consistent finding," Drs. Walter W. Dalitsch and Sunder J. Vazirani concluded. —*American Journal of Surgery*, December, 1959.

Pain in the Legs, Fever, Chills, Splenomegaly, and Hypertension

Case Presentation

A 38-YEAR-OLD WHITE man was admitted to KUMC on August 3, 1957 complaining of pain and weakness in both legs for about two weeks. The pain migrated from his legs to his back and testicles, and he had some difficulty in walking. On July 25 his blood pressure was 142/82, and his temperature was normal. On July 30 he had fever and chills, and he was hospitalized. At that time his blood pressure was 130/75; temperature, 100.6 degrees; pulse, 89 per minute; respiratory rate, 22.

His past history and family history were noncontributory.

PHYSICAL EXAMINATION

When examined at KUMC the patient was found to be a well developed, well nourished man who was pale and appeared to be acutely ill. His blood pressure was 136/84; pulse, 82 per minute and regular; temperature, 99 degrees; respiratory rate, 20. There was a grade II rasping systolic murmur at the aortic area which was not transmitted. The liver was palpable at the right costal margin, and the spleen was palpated 5 cm. below the left costal margin. There was a yellowish tint to his palms and to the soles of his feet which were cool to the touch. The nail beds were cyanotic. The femoral artery pulses were of two plus intensity; the dorsalis pedis and posterior tibial pulses were only one plus. There was no evidence of varices of the lower extremities.

LABORATORY

The specific gravity of the urine varied from 1.010 to 1.029 with 10 to 20 pus cells and 2 to 3 red blood cells per high power field, 1 to 2 plus albumin, and a few motile bacteria. On admission the red count was 4,950,000 and the hemoglobin was 13.6 gm. There was moderate anisocytosis with normal shape and color. The white count was 60,315 with two per cent polymorphonuclears (two per cent filamented), eight per cent lymphocytes and 90 per cent immature mononuclear cells and blasts. The total white count subsequently gradually increased to 122,500 at the time of death, but there was no increase in the number of mature polymorphonuclears. A platelet count on admission was 70,000 and varied thereafter from 16,000 to 45,000. A Bence-Jones protein test was negative.

HOSPITAL COURSE

On admission the patient complained of severe pain in the calves of his legs and paresthesias of his feet. The nail beds became progressively more cyanotic, and the skin temperature gradually decreased. Vasodilating agents were not effective. On August 14 the femoral pulses, dorsalis pedis and posterior tibial pulses were completely absent. There was marked elevation pallor and dependent cyanosis, and his feet and legs were cold to the touch. On August 15 he developed nausea, vomiting, and severe pain in the lower abdomen, buttocks, and testicles. At that time his blood pressure was 180/100. On August 19, after the administration of a fibrinolytic agent, the pain in the extremities, testicles and sacrum became progressively more severe. He had chills and fever to 105 degrees, and his blood pressure rose to 200/100. Following the second administration of the fibrinolytic agent there was some improvement. On August 16 bishydroxycoumarin was started, and the prothrombin time became elevated, ranging from 17.5 to 50 per cent.

He continued to have pain and paresthesias of the feet, particularly of the left foot and calf. On September 1 he complained of frontal headache, and began to have episodes of vomiting so severe that he required parenteral fluids. His blood pressure was 230/110 with a full bounding pulse. The peripheral pulses of the lower extremities were palpable, and a grade II systolic murmur, which had previously

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Edited by Jesse D. Rising, M.D. and Mahlon Delp, M.D. from recordings of the conference participated in by the departments of medicine, pediatrics, surgery, radiology, and pathology of the University of Kansas Medical Center as well as by the third and fourth year classes of students.

disappeared, was again noted. By September 6 he was critically ill, incoherent, confused, and lethargic. Rales were heard in both lung fields. He died on September 10, 1957.

Dr. Mahlon Delp (moderator): Are there any questions?

Orlyn Engelstad (student):* Were any hemoglobin values obtained other than the one on admission?

Dr. Wu-Hai Tu (resident in medicine): The hemoglobin ranged from 9.0 to 13.6 gm.

Don Ginardi (student): What were the blood urea nitrogen levels?

Dr. Tu: The blood urea nitrogen was from 13 mg. per cent to 103 mg. per cent.

Ashford Galbreath (student): What was his urinary output?

Dr. Delp: On September 5 his output was 1200 ml.; on September 6, 750 ml.; and on September 7, 800 ml.

Donald Hayen (student): Was abdominal distention associated with the pain?

Dr. Tu: There is no mention of any abdominal distention.

Albert Duncan (student): Did he have any chest pain?

Dr. Tu: No, he did not.

Orville Boicourt (student): Did he have any retinopathy late in his course?

Dr. Tu: No, he did not.

Mr. Ginardi: Did he have a previous history of kidney infection?

Dr. Delp: No, he apparently had been perfectly well until the onset of his illness.

Kenneth Kihle (student): Was there any lymph node enlargement?

Dr. Sloan Wilson (hematologist): He had no enlarged lymph nodes.

Mr. Boicourt: Did he ever have purpura?

Dr. Wilson: No, he did not.

Mr. Engelstad: What were the potassium values?

Dr. Delp: They were extremely low.

Mr. Kihle: Will you describe his terminal event?

Dr. Delp: Dr. Larsen, will you tell us about that, please?

Dr. William E. Larson (hematologist): Terminally, the patient had congestive failure and acute pulmonary edema.

Mr. Duncan: Were there signs of embolization?

Dr. Delp: There were no splinter hemorrhages.

Mr. Hayen: Did the onset of his leg pain occur suddenly?

Dr. Delp: The pain gradually progressed from the time he became ill.

Mr. Ginardi: Were any blood cultures done?

Dr. Delp: No.

Mr. Boicourt: Was he given any antibiotics?

Dr. Delp: Yes, he received antibiotics and a number of other medications. If there are no more questions we will have the electrocardiograms.

ELECTROCARDIOGRAMS

Mr. Boicourt: The first electrocardiogram taken on September 7 shows a normal sinus rate of approximately 120. The P-R, QRS and QT intervals are normal. There is non-specific T wave flattening in leads I and V_6 and minimal S-T segment elevation in lead V_2. There are several venticular prematurities in leads I, II, III, V_4R and V_2. I interpret this as a sinus tachycardia with ventricular premature contractions.

A tracing on September 8 shows the inversion of T waves in lead aV1. There is continued S-T segment elevation in lead V_2 and V_3 and a suggestion of a biphasic T wave in both leads.

A tracing taken on the day of death shows a low amplitude R wave with S-T segment elevation and inversion of the T wave in leads V_2, V_3 and V_4 and a definite decrease in the R wave in leads V_4, V_5 and V_6 *(Figure 1)*. I interpret this tracing as suggestive of myocardial infarction.

Dr. Delp: From the appearance of these tracings, Dr. Larson, do you believe that the patient had a myocardial infarction?

Dr. Albert Jackson (internist): No, I do not.

X-RAYS

Dr. Delp: May we have the x-rays now, please?

Dr. Galbreath: An intravenous pyelogram taken

Figure 1. Electrocardiogram taken on the day of death, September 10.

* Although a student at the time of this conference in November, 1958, he, like the others referred to as students, received the M.D. degree in June, 1959.

on September 4 *(Figure 2)* shows some collection of radio-opaque material in the right kidney. The left kidney is obscured by overlying bowel, gas and feces. Because there is no flat plate of the abdomen it is difficult to determine whether this is calculus. There is some dilatation of the calyces, and the spleen is enlarged.

A 4-minute film shows essentially the same findings, and no bony abnormalities are seen. There is no collection of radio-opaque material in the ureters, and there is no outline of the kidney on the left.

An upper gastrointestinal series taken on the day of admission is normal, and there is no evidence of a mass. There is some indention by the enlarged spleen, but I interpret this as a normal film.

A chest film on August 20 shows no bony abnormalities. The posterior diaphragmatic areas and the lung fields are clear. No bony abnormalities are seen except for a mild scoliosis of the thoracic vertebra. The heart is normal, and there is no hilar adenopathy. The angles of the diaphragm are normal and clear, and I interpret this as a normal chest film.

Dr. Delp: Thank you. May we have your comments, Dr. Germann?

Dr. Donald R. Germann (radiologist): A number of other films showed that this was not a staghorn calculus. The chest and upper gastrointestinal series were normal. The intravenous pyelogram was of interest because of the marked delay in kidney function. The left side was poorly outlined and showed some hydronephrosis. The most significant finding of the x-ray was the poor kidney function on the left.

Figure 2. Intravenous pyelogram taken on September 4.

Dr. Delp: Thank you. May we have your differential diagnosis now, Mr. Kihle?

Differential Diagnosis

Mr. Kihle: This 38-year-old man was admitted here complaining of pain and weakness in both legs for about two weeks' duration. He had no definite symptoms until his hospitalization elsewhere when he developed chills and fever. Physical findings showed generalized pallor, a palpable liver and spleen, a grade II systolic murmur, diminished pedal pulses, cyanosis, and coldness of the feet. There was marked leukocytosis, predominantly of immature mononuclear blast cells, and a low platelet count. The hemoglobin was 13.7 gm.

Eleven days after admission all of the pulses were absent in the lower extremities. On the following day he developed buttock and testicular pain associated with nausea and vomiting and a rise in blood pressure. His condition became progressively worse, and he died on the 38th hospital day.

I shall base my differential diagnosis on marked leukocytosis, hypertension, immature cells in the peripheral blood, thrombocytopenia, and hepatosplenomegaly. Leukemoid reaction is suggestive of leukemia and occurs under a variety of circumstances including infections, intoxications, malignancies and following severe hemorrhage. The clinical features which distinguish leukemoid reactions are marked immaturity of the cells, lack of evidence of hemopoietic disturbances such as immature circulating red cells, platelet abnormalities, and sternal tenderness. I conclude that this patient did not have leukemoid reaction.

The lymphomas, which include the lawless proliferation of lymphocytic cells, can be ruled out because there was no generalized lymphadenopathy or x-ray fiindings to support that diagnosis.

On the basis of its clinical course leukemia may be classified as acute, subacute or chronic. Early a chronic leukemia with relatively acute symptoms may develop with acute exacerbations, but because the white count was from 60,000 to 120,000 with 90 per cent immature mononuclear blast cells, and because the clinical course was seven weeks duration, my diagnosis is acute leukemia. Weakness and pain in both legs could have been due to subperiosteal and periosteal infiltration, but may have been the result of arterial insufficiency with paresthesias, progressive cyanosis and rapidly diminishing peripheral pulses. Because the pain was migratory one would suspect a process of partial occlusion in the arteries of the legs ascending up into the femoral and iliac areas and into the aorta.

Arterial Embolism

I will first consider embolization as a possible cause of the pathological process. There is a marked hemorrhagic tendency in most cases of acute leukemia. Numerous cases have been reported of hemorrhage and leukocytic infiltration of the heart muscle with thrombus formation in the left ventricle, but one would expect to find more evidence of embolization in other parts of the body.

Non-bacterial thrombotic endocarditis characterized by verrucous endocarditis is seen in a variety of infections and in acute and chronic wasting diseases such as leukemia. The essential characteristic of that disease is the presence of a non-specific valvular vegetation along the closing line of the cusps. Microscopically there are agglutinated blood platelet thrombi. The fact that our patient had a changing aortic murmur would, however, make one suspicious of that diagnosis. Leukemic involvement of the periaortic nodes could theoretically lead to compression of the aorta, but that is unlikely.

Mucormycosis is occasionally seen as a complication of leukemia and is unique among the microorganisms in that there is a greater tendency for involvement of the blood vessels by penetration of the muscular walls. It simulates arteritis with thrombus formation and later involves the veins and lymphatics. It has been reported that there is an increase in patients with leukemia, diabetes and tuberculosis, and there may be involvement of the coronary artery with thrombosis in the disseminated forms. No reports were found in the literature, however, of involvement of the aorta.

In acute leukemia the walls of the large arteries and aorta may have leukemia infiltration which can serve as a nidus for the formation of a thrombus which may progress to occlusion of the larger vessels.

A review of the literature supplied only one case of large artery thrombosis in acute leukemia, but capillary and venous thromboses are seen occasionally. The patient's history suggests arterial insufficiency. I believe that small artery thrombosis developed with proximal extension into the larger vessels. Because gangrene of the extremities did not develop there may have been only partial occlusion of the arterial supply. The thrombotic process extended proximally into the aorta causing gluteal and testicular pain. There was complete absence of femoral, dorsalis pedis and posterior tibial pulses, and the feet were cold to the touch. At that time the thrombotic process was obliterating the iliac vessels and extending into the aorta. On the thirteenth hospital day the patient's blood pressure was 180/100, and he had nausea, vomiting, and severe pain in the lower abdomen and testicles. The occluding process then involved the renal and spermatic arteries. Chills and fever followed the administration of a fibrinolytic agent, but that may have been a side reaction of the fibrinolysis. After a second administration of the fibrinolytic agent the patient had some relief of his symptoms; the peripheral pulses became palpable, and there was recanalization of the thrombus.

Anticoagulant therapy was begun, but his condition again became worse. His blood pressure rose to 230/110 which can be explained on the basis of renal artery thrombosis in which there is usually a rapid rise in blood pressure. Terminally, he vomited considerably and was confused and lethargic, but it is questionable whether those symptoms were the result of a hypertensive encephalopathy which is often seen in a rapidly rising blood pressure of renal origin. There was temporary improvement of the rales which had developed in both lung fields, but they recurred terminally and probably were the result of left ventricular failure.

In summary, I believe our patient had an acute leukemia with an ascending arterial thrombosis involving the aorta and renal arteries and resulting in hypertension and death.

Clinical Discussion

Dr. Delp: Thank you. What was the etiology and the pathogenesis for his congestive heart failure, Mr. Hayen?

Mr. Hayen: Leukemic infiltration of the myocardium.

Dr. Delp: Mr. Ginardi?

Mr. Ginardi: I agree with that.

Dr. Delp: Mr. Galbreath?

Mr. Galbreath: It could have been on the basis of hypertension or a myocardial infarct.

Dr. Delp: Is it unusual for patients of that age to go into congestive failure?

Mr. Galbreath: The onset of hypertension was rather sudden, but it is not impossible.

Dr. Delp: What is your opinion, Mr. Duncan?

Mr. Duncan: Coronary arteriosclerotic disease is not uncommon at that age.

Dr. Delp: Since the patient was not in congestive failure on the day of admission, could there have been another reason for his heart failure, Mr. Galbreath?

Mr. Galbreath: His heart was working against the tremendous occlusion of the aorta, and a great load was placed on it by the rapid increase of blood pressure. Together, these two factors could have caused his failure.

Dr. Delp: Mr. Boicourt?

Mr. Boicourt: I agree with that.

Dr. Delp: Will you review the suggestions that have been made as to the cause of his congestive failure, Mr. Kihle?

Mr. Kihle: Leukemic infiltration of the myocardium, the partial aortic occulsion, and the acute hypertension.

Dr. Delp: Mr. Etzenhouser?

Russell Etzenhouser (student): There may have been pericarditis.

Dr. Delp: Mr. Engelstad, what is the significance of the low sodium and chloride values?

Mr. Engelstad: The patient could have had a hypervolemia.

Dr. Delp: What would cause him to have a hypervolemia?

Mr. Engelstad: He may have been sensitive to anti-diuretic hormones thus producing a retention of water.

Dr. Delp: Mr. Ginardi?

Mr. Ginardi: I agree with that, but there was also the possibility of overhydration.

Dr. Delp: What would cause overhydration?

Mr. Ginardi: The administration of intravenous fluids.

Dr. Delp: Mr. Hayen, what is your opinion?

Mr. Hayen: The patient had some kidney insufficiency and retention of water later in his course.

Dr. Delp: Mr. Engelstad, what is the usual renal output when there is a low sodium and chloride?

Mr. Engelstad: About 500 ml.

Dr. Delp: Mr. Ginardi?

Mr. Ginardi: We have to depend on the mechanism we are postulating. Because of the anti-diuretic hormone he would probably have less of a diuresis and a low output, but he was receiving large amounts of fluid and he still could have had a good output.

Dr. Delp: May we have your comments, Dr. Berry?

Dr. Maxwell Berry (internist): In acute leukemia thrombosis occurs within the lumen of the aorta, and does not necessarily have to propagate from below. I believe the patient's problem was intraluminal thrombosis of the aorta with progression upward to involve the left kidney. The artery to the kidney was partially or completely occluded. The terminal part of his illness was a reaction to the load of the acute hypertension, together with numerous other factors. I can not help but believe that he had an acute hypertension and acute congestive heart failure. There was, of course, some interference with his oxygenation which was, among other things, probably the result of loss of hemoglobin.

Dr. Delp: Do you believe that his hypertension was the result of the blocked aorta?

Dr. Berry: No, I do not.

Dr. Delp: May we have your comments, Dr. Manning?

Dr. Robert Manning (internist): The patient's terminal event could also be theorized on the basis of liver failure. Enlargement of the liver with probable leukemic infiltration, a high white count, and ascites in the abdomen usually are associated with low sodium and chloride and low renal output. These factors could also contribute to his congestive failure and fluid overload.

Dr. Delp: Dr. Jackson, have you seen many patients with congestive heart failure as a result of leukemic infiltration of the myocardium?

Dr. Jackson: No, I have not.

Dr. Delp: Do you believe that that is what happened here?

Dr. Jackson: No, I believe the patient's hypertension was due to an increase in peripheral resistance which, in turn, was due to the occlusion of the renal arteries and resulted in failure. The left ventricular failure could also explain the low sodium and chloride. I believe that he did have an infiltration of the pericardium.

Dr. Delp: Did the hypertension develop too suddenly to be the result of the non-functioning kidney?

Dr. Jackson: No, I do not believe so.

Dr. Delp: Can we assume that the patient had a properly functioning kidney before the onset of his illness?

Dr. Jackson: It is possible.

Dr. Delp: The students claim that the patient had leukemia and a blocked aorta. May we have your comments regarding the aorta, Dr. Wilson?

Dr. Wilson: Arteries can be involved in various ways. One case in the literature reports a patient with complete rupture of the aorta from infiltration of the vessel wall with leukemic cells. Other cases have been reported in which the actual infiltration in the vessel wall started a thrombotic type of episode; however, little is known about the study of hypercoagulation of the blood. One theory is that because there are so many of these cells more tissue extract is released causing hypercoagulation of the blood with thrombus formation. On occasion one may see a patient with hemorrhage which requires posterior nasal packs, while at the same time there is a thrombotic episode in another part of his body. We are caught between two extremes, either to use an anticoagulant or to attempt to lyse a thrombus that has already been formed.

Dr. Delp: Thank you. Dr. Higginson, may we have your report now, please?

Pathological Report

Dr. John Higginson (pathologist): The patient was well nourished and showed no significant lesion on external examination apart from numerous ecchymoses which were most marked around needle puncture wounds.

On naked eye examination the bone marrow had a rather creamy, purulent appearance. On microscopy the marrow was almost completely replaced by leuke-

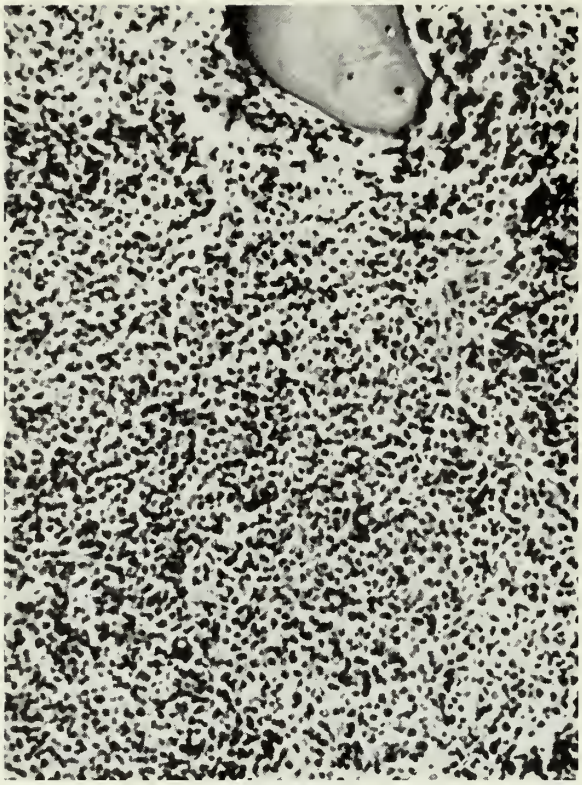

Figure 3. Section of acute leukemic bone marrow showing replacement by numerous primitive blast cells. H & E x 155.

mic cells with large nuclei containing irregularly dispersed chromatin and surrounded by relatively scanty cytoplasms *(Figure 3)*. The spleen was a dark reddish-brown in color and enlarged, weighing 840 gm. A cone-shaped white infarct (3 cm. in width) with hemorrhagic margin was present on the parietal surface. In addition to leukemic infiltration, foci of extra-medullary hemopoiesis were also present.

Scattered small infiltrates by leukemic cells were also found in the capsule and sinusoids of the liver, in the wall of the intestine, the kidneys, bladder, testes, adrenals, lymph nodes, and skin.

The most striking features were in relation to the aorta and kidneys. The abdominal aorta contained a large thrombus which extended from above the renal arteries into both common iliac arteries. It also partly filled the left renal artery. The greater part of the thrombus appeared recent, being brown, friable, and loosely adherent to the wall. The right kidney was somewhat larger and paler than the left; the right kidney weighed 240 gm., the left kidney, 190 gm. The latter, however, showed areas of irregular pallor of the cortex suggesting cortical infarction.

On sectioning the aorta, a considerable degree of atherosclerosis was seen covered by an overlying thrombus. While the latter showed early organization, the greater part appeared relatively recent *(Figure 4)*.

The left kidney showed areas of coagulative necrosis involving the greater part of the cortex and the medulla. In the remainder of the organ many of the interlobular arteries had thickened edematous walls which sometimes were occluded by fibroblastic thickened intima and sometimes by thrombus. In the relatively intact areas the glomeruli and afferent arterioles were normal. In the right kidney there were numerous foci of fibrinoid necrosis in the afferent arterioles and in the glomeruli *(Figure 5)*. Such lesions are observed in acute hypertension, and are believed to be a reaction to rapid rises in blood pressure.[1]

The lungs were much heavier than normal and weighed 3,080 gm. All lobes were dark red and of a firm, meaty consistency. The cut surface was dry, and fluid could not be readily expressed. On microscopy, the alveoli were filled with varying amounts of edema fluid, fibrin, and red cells; in some areas, leukemic cells were prominent *(Figure 6)*. The latter were also seen in the capillaries throughout the lungs.

Of the remaining organs the heart was somewhat increased in weight (510 gm.). The liver weighed

Figure 4. Section through wall of abdominal aorta showing unorganized thrombus, atheromatous thickening of the intima and vascularization and inflammation of the media. H & E x 44.

2,820 gm. and showed accentuation of the normal lobular pattern. In addition, many small intrahepatic veins were occluded by yellowish-white thrombi showing varying degrees of organization. The lymph glands were not unduly enlarged.

In summary, the patient had an acute leukemia, the exact cell type of which is uncertain, although the cells most suggested a Shilling type of monocytic leukemia. Thrombosis developed on a moderately atherosclerotic aorta, and this resulted in ischemia of the left kidney due to obstruction of the renal artery. The resultant Goldblatt mechanism led to an acute rise in blood pressure, as observed clinically, and to the necrotizing arteriolitis seen in the unprotected right kidney.[2] Progressive renal failure finally ensued, and death resulted from a terminal hemorrhagic bronchopneumonia.

The changes in the other organs are incidental to the leukemia, but the thrombus of the aorta requires further comment. The presence of the thrombosis in association with a hemorrhagic diathesis is difficult to explain. It is possible that it may be related to destruction of leukemic cells of the monocytic type with resultant release of thromboplastin.[3] However, such a mechanism is rare. On the other hand, it is not uncommon to see intra-aortic thrombi superimposed on moderate atherosclerosis in elderly people for which no other specific cause can be found.

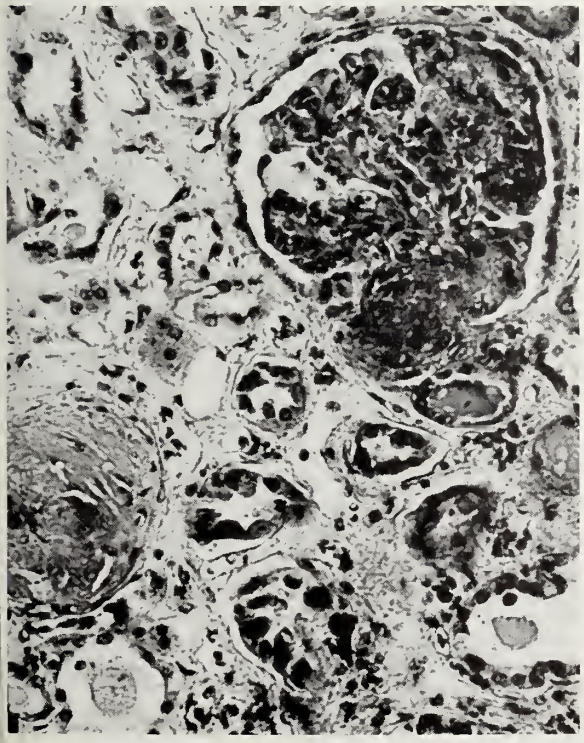

Figure 5. High power view of right kidney showing an almost completely sclerosed glomerulus. A second glomerulus shows fibrinoid necrosis of the afferent arteriole. H & E x 300.

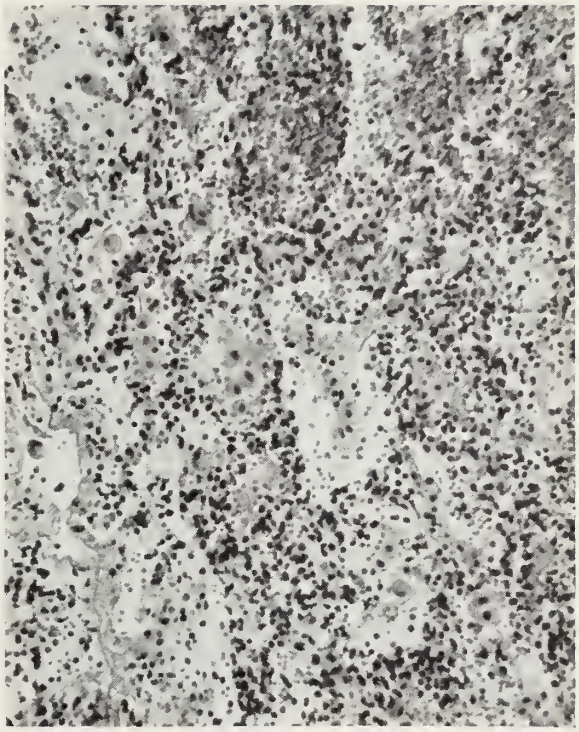

Figure 6. Section of the lung showing infiltration of red cells, leukemic cells, also fibrin into the alveoli. H & E x 155.

Dr. Delp: How long do you believe the thrombus had been in the aorta?

Dr. Higginson: It appeared to me that it had been in the aorta for the last two or three weeks. However, it is possible that there may have been an earlier thrombus which broke off, and there may have been a second superimposed thrombus since there was some difference in the degree of organization.

Dr. Delp: How far did the thrombus extend?

Dr. Higginson: It extended into the common iliac arteries and about 11 cm. above the renal artery. Unfortunately, it was not possible to open the leg arteries.

Dr. Delp: Are there any other questions?

Mr. Engelstad: Can you tell us about the adrenals?

Dr. Higginson: There was no abnormality of the adrenals except for some leukemic infiltration of the zone reticularis and fasciculata.

Summary

Dr. Delp: As a complication of acute leukemia a whole series of progressive signs and symptoms (*i.e.* pain in the legs, perineum and back, cyanosis and diminishing pulse in the lower extremities) gave

the clinicians ample opportunity to predict the uncommon situation of thrombotic obstruction of the aorta from the iliacs to some point above the origin of the renal arteries. The clearly documented, marked increase in the blood pressure was adequate evidence of nature's spontaneous production of a Goldblatt kidney model.

Pathological Anatomical Diagnosis

Acute leukemia involving the marrow, liver, spleen, and lymph nodes with focal infiltration of the heart, kidneys, adrenals, skin, stomach, pancreas, and testes.

Unorganized thrombus occluding the abdominal aorta, extending from 2 cm. of both common iliac arteries to 1 cm. above the renal arteries with extension into the left renal artery, 1 cm.; with recent thrombus extending to 11 cm. above the renal arteries.

Organizing infarction of the peripheral cortex of the left kidney.

Acute necrotizing arteriolitis of the right kidney.

Hypertrophy and dilatation of the heart.

Acute hemorrhagic bronchopneumonia.

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Primary Aldosteronism

(Continued from page 171)

data presented here confirms these reports of the effectiveness of spirolactones in antagonizing the effect of aldosterone excess. A definite negative sodium balance was induced. Potassium balance was little affected although urinary excretion of potassium was decreased while fecal potassium increased. The positive potassium balance throughout is probably related to the patient's total body potassium deficit plus the fact that she was receiving a low sodium diet.

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Committee
REPORTS

Defective Hearing in Children

Part V—Evaluation of Clinical Data

C. W. ARMSTRONG, M.D., *Salina*, Editor

THE EVALUATION OF CLINICAL data in defective hearing depends upon the interest and ingenuity of the individual physician. The majority of diseases which produces a decrease in hearing, can be managed in a more intelligent manner if an audiogram of some type is available. This allows the physician to have an objective measurement not only of the hearing loss at the onset but also a means by which he can measure the improvement in hearing as therapy progresses. The small otometer is of value for this purpose.

Most Common Defect

The most commonly observed form of defective hearing is due to eustachian tube blockage which is frequently referred to as eustachian salpingitis or tubotympanitis. This condition usually occurs in conjunction with upper respiratory disease, however, it may occur with such negative findings as an apparently normal tympanic membrane, normal nasal passages and no enlargement or infection of the tonsils and adenoids. When it does occur without other disease being apparent, the audiogram does not always follow a fixed pattern. In general the condition tends to produce a hearing loss for the lower frequencies only. This is the result of closure of the eustachian tube and its attendant hearing loss due to a lack of equalization of the air pressure on the two sides of the tympanic membrane.

A series of six articles on Defective Hearing in Children is being printed in the *Journal*. These articles were prepared by C. W. Armstrong, M.D., Salina, Kansas, for the Committee on Conservation of Hearing and Speech. The committee members are V. R. Moorman, chairman, C. W. Armstrong, J. A. Budetti, R. A. Draemel, E. L. Gann, C. L. Gray, W. P. McKnight, E. E. Miller, Ruth Montgomery-Short, W. D. Pitman, R. R. Preston, G. O. Proud, R. E. Riederer, and M. J. Ryan.

The title of the coming article will be Conclusions.

In otitis media, the audiogram tends to assume a more nearly flat appearance. The loss is about the same for all frequencies. Otitis media, especially the acute and purulent type, are easily diagnosed by clinical means, but their progress is more satisfactorily followed when audiometry is added to the other methods of evaluation.

This is the fifth article in a series of six prepared by the Kansas Medical Society Committee on Conservation of Hearing and Speech. They are edited by Dr. C. W. Armstrong, Salina. The final article will appear in the April issue of the JOURNAL.

Hearing losses are observed by audiometry in conjunction with other upper respiratory disease such as the acute phase of tonsil and adenoid disease even when there is no gross obvious hearing loss. Here, there is no fixed pattern but there is satisfaction to be gained in measuring an otherwise uncertain loss of hearing.

Chronic middle ear disease may have a fairly good prognosis if the hearing defect is not severe and the mastoid x-ray is negative.

Has a Flat Audiometric Curve

Serous otitis media is a common condition and may be unilateral or bilateral. There is a moderate to severe defect of hearing with a fairly flat audiometric curve. This condition is recognized by the variable position of the tympanic membrane, the lack of inflammation, and the presence of clear to brownish fluid in the middle ear. Occasionally, bubbles or a fluid line may be present. If bubbles are present and there is no active upper respiratory infection, Valsalva inflation is often a sufficient form of treatment. Repeated myringotomies with aspiration of the middle ear fluid may be necessary in the ear with persistent fluid.

Defective hearing due to the presence of cerumen and debris in the external ear is easily diagnosed and usually can be improved immediately by adequate removal of the offending material.

The person with recurring upper respiratory infections or a "perennial cold" should be viewed in relationship to his environment. For example, the parent who holds two jobs to provide his family with the necessities of life may have a low vitality and be the carrier of a low grade infection. He can be the host from whom the child gets his recurring infection which caused the child's anemia and debility. The cause of such perennial colds and debilities must be diligently sought and if possible corrected.

Refer to Otologist When Present

There are certain conditions which probably should be referred to an otologist. Among these are aural polyps and granulation tissue which is found while the ear is being cleaned. The polyps usually protrude through a tympanic perforation and are frequently attached to vital structures such as the dura mater, the facial nerve, or to a fistula of one of the semicircular canals. Another such condition is cholesteatoma in which cakes of epithelial debris are found to be coming through a perforation of the drum membrane. This is due to the presence of squamous epithelium behind the drum membrane and surgical treatment is frequently necessary.

The diagnosis of hearing defects is not merely a matter of audiometry but is an evaluation of all the clinical data. The audiogram establishes the degree of the hearing defect, and repeated audiograms are a distinct aid in following the progress of the patient under treatment.

(To be continued in the next issue of the JOURNAL.)

710 United Building
Salina, Kansas

Job Heart Attacks

Only one of five heart attacks occurs on the job, according to the current issue of *Patterns of Disease,* prepared by Parke, Davis & Company for the medical profession. Moreover, an increasing number of heart disease victims can and do return to work, the publication reveals.

Evidence for these statements is based on a survey of 112 companies in Minnesota. The survey showed that about two-thirds of patients surviving attacks return to their former place of employment, almost one-half of these returning to their former jobs.

Rehabilitation, vocational guidance, and selective placement of cardiac patients make it possible for an increased number of persons to resume work.

However, many companies remain reluctant to hire cardiac victims. The Minnesota survey showed, for instance, that nearly 60 per cent of companies seldom or never hire persons with known heart disease, and about 3 per cent of them require cardiac employees to seek work elsewhere.

A large factor in reluctance of employers to hire cardiac patients is consideration of Workmen's Compensation or group insurance and sick-leave liability claims.

Maternal Mortality

A 20 year old primigravida died following delivery of a normal seven pound, ten ounce infant. Death was attributed to intracranial hemorrhage due to eclampsia. Findings were supported by autopsy.

The patient's medical history revealed no points of significance and family history was also non-contributory. Her prenatal care was initiated early in pregnancy and was consistent. Routine laboratory work-up was performed.

The first indication of trouble occurred during the last month of pregnancy, some 17 days prior to delivery, when a trace of albumin was noted on routine urinalysis. One week later this was two plus, but there were no other abnormalities. This finding was repeated at the next visit which was two days prior to hospital admission. A gain of 19 pounds in the last six weeks was noted, the total for the full pregnancy being 36 pounds. Blood pressure during the last weeks of pregnancy varied from 124/84 to 148/110, the latter being at the visit two days before admission. Mild edema of the lower legs was noted in the latter weeks. Otherwise, there were no significant symptoms or findings during the prenatal period.

The indications of toxemia prompted the physician to advise elimination of salt from the diet, bed rest, and sedation. She was instructed to return to the office for a recheck the next day, but instead the patient went into labor spontaneously and was admitted to the hospital that day.

Upon hospital admission, a blood pressure of 168/110 and two plus edema was noted. Urinalysis disclosed four plus albuminuria. Labor progressed steadily but the patient was thought to be in a preconvulsive state because of persistent drowsiness. Forty-four minutes prior to delivery a generalized convulsion occurred. The following medications and procedures were instituted: Continuous oxygen by pressure mask, and later, tent; sodium amytal and pentothal to control impending convulsions; magnesium sulfate 50 per cent, two cc. every four hours; 10-20 per cent glucose in water in water in small amounts; continuous Fowler's position; Unitensin® during delivery; and then continuously intravenously; spinal anesthesia for delivery; prophylactic antibiotic. Consultation was obtained with another obstetrician, an internist, and an ophthalmalogist. Delivery was accomplished by low forceps with an episiotomy, and the placenta was delivered with mild fundal pressure. Following delivery, the patient's condition went steadily downhill, and she died seven hours after delivery.

Autopsy findings included "cerebral hemorrhage into the ventricular system (left lateral ventricle), massive, with brain destruction," bilateral congestion and edema of the lungs, and moderate congestion of the liver. The case was reviewed by the hospital staff.

Committee Opinion

The committee felt that the cardinal signs of preconvulsive toxemia (albuminuria, excessive weight gain with edema, elevated blood pressure) were recognized by the attending physician, but not actively treated soon enough. The outcome of the case might have been altered had earlier hospitalization been advised. Hospital management was considered adequate.

Classification

Maternal death, direct obstetric, avoidable.

One of a series of case reports prepared by the Committee on Maternal Welfare to illustrate the type of study made in each instance of maternal death in Kansas.

Editorial Comment

This JOURNAL welcomes to its staff Dr. Jesse D. Rising of the University of Kansas Medical Center. Doctor Rising is now filling the position formerly held by Dr. Vernon E. Wilson—that of Associate Editor representing the Medical Center. He has previously contributed of his talents in the editing of some of the clinical pathological conferences.

This issue of the JOURNAL is the 14th Annual University of Kansas Issue, and the work of assembling and editing the material has been done by Doctor Rising. We are grateful to him and to the numerous contributors for the excellent material here provided. The University Issue has become recognized as an outstanding number each year and we appreciate the privilege of continuing it from year to year.

Orville R. Clark, M.D.—Editor

From the Stacks

Medical Books and Libraries in Kansas

The first issue of the new *Index Medicus* (January 1960) has now reached the medical libraries of Kansas and, lest a highly significant event pass unnoticed, this first column of a series on medical literature and libraries in Kansas is devoted to it and to a proposal for better library service to Kansas physicians.

For nearly 20 years there have been two major indexes to medical periodicals, the A.M.A.'s *Quarterly Cumulative Index Medicus* and the National Library of Medicine's *Current List of Medical Literature.* Many people have relied heavily on the *Quarterly Cumulative* in preference to the *Current List* in their efforts to keep up with the literature because it was simpler to use. The *Current List* won its place by living up to its name in being current as well as comprehensive. In place of both these we now have the *Index Medicus,* published monthly by the National Library of Medicine and available for 20 dollars a year through the Superintendent of Documents, Government Printing Office, Washington 25, D. C. The American Medical Association, as its share of responsibility, will publish annual cumulations of the index under the title *Cumulated Index Medicus.* The price of this has not yet been announced.

Index Medicus

The *Index Medicus,* which will gradually be enlarged in its coverage, is the most extensive indexing service of the literature of a specialized subject and it affords to Kansas physicians, as to all others, the key to a very large part of the world literature of medicine. The National Library of Medicine which published it is at the top of a pyramid of library service which has at its base thousands of small local libraries in hospitals and medical societies. The plan of service is based on the assumption that a physician in need of literature will first exhaust the local facilities, whatever they may be, then the statewide services such as are offered by the Stormont Medical Library in Topeka and the Clendening Medical Library at the University of Kansas Medical Center, and finally the National Library itself which, however, will lend directly only to other libraries.

The lack of local facilities is often the weak link in the chain of library service. It would seem reasonable to suggest that every hospital and medical society in Kansas, even if it supports no library of its own, should acquire as a top-priority purchase the *Index Medicus* or its cumulation. By collecting references from its pages and requesting loans from the Stormont or Clendening Libraries of specific articles of his own choosing, rather than by sending blanket requests for material on vaguely defined subjects, the Kansas doctor can gain quick access to perhaps half of the more than 100,000 journal articles a year which will be covered by the *Index Medicus.*

A Suggestion

In Kansas no more than eight medical libraries exist which meet the standards of the Medical Library Association. There are, however, probably two hundred established public libraries which would be willing to service the *Index Medicus* if a subscription were placed there by the local medical community. In most cases the public libraries could also make loan requests to other libraries on behalf of their medical patrons, and handle the mailing which can be done at a preferential rate between non-profit institutional libraries.—G. S. T. Cavanagh, *Clendening Medical Library, University of Kansas Medical Center.*

Executive Stress

The stresses of executive life do not take the high toll expected, according to the current issue of *Patterns of Disease,* prepared by Parke, Davis & Company for the medical profession.

Contrary to popular belief, executives do not have a higher incidence of heart conditions or tension disorders than other employees with less responsibility.

In fact, one large scale study of close to 1,400 employees revealed, surprisingly, a slightly lower incidence of such conditions as hypertension, arteriosclerosis and myocardial infarction among executives than nonexecutives. In another study analyzing the prevalence of some 16 medical conditions among employees (including anxiety states, peptic ulcer, and gastrointestinal diseases), only two conditions ranked significantly higher among executives. They were arthritis and rheumatism and "back" cases (both twice as high). On the other hand, hernias occurred almost three times as frequently among nonexecutives.

Possibly executives are healthier than other workers to start with, or have means of releasing tensions, or take better care of themselves than other workers.

The President's Message

DEAR DOCTOR:

Many leaders of American Medicine view the coming months of the second session of the 86th Congress as the most critical ones ever confronting our profession, even including the days of the all out push for compulsory federal health insurance during the Truman administration.

We have arrived at a situation where it is estimated that 44 per cent of the nation's medical bill for the last year was paid by a local, state or federal agency. In California eleven per cent of its revenue, in 1958, was spent on state financed medical care for over one half million of its citizens. A very large percentage of our entire population is eligible for some sort of federal health care.

Is the private practice of medicine, the free enterprise and competitive system, which has resulted in such high standards of health care for the American public to be swallowed piecemeal until it no longer can exist without government subsidization? Is this the strategy with which our opponents seek to gain control over our profession? If so, the plan seems to be destined for success, unless blocked by effective counter offensives.

All out attempts have been made by the A.M.A., your state society, and most local components to warn the profession of the seriousness of the situation. Yet many of our members still are not aware of the provisions and pitfalls of the Forand type of legislation which may come before Congress at any time. Despite the protestations of the sponsors to the contrary, this proposed act is socialization and must be recognized as such. Business leaders know this fact and are backing the medical profession in its fight, because after socialization of medicine, governmental control of banking, manufacturing, the practice of law, the railroads and many other businesses is but a simple step away.

Your county, state and national medical societies are the logical agencies through which the physician can plan an effective part in this fight. Over the past few years there has been a decline of interest in these organizations because of the shift of emphasis on scientific postgraduate education from the medical society to speciality groups, general practice groups, refresher courses, etc. This has perhaps been beneficial from the viewpoint of the dissemination of scientific information but has deprived the medical society of many excellent leaders and of much interest in the political and economic aspects of medical practice with which medical societies must concern themselves.

The 1960 meeting of the Kansas Medical Society will be in Hutchinson, May 2, 3, and 4, as has been announced in the JOURNAL. Now is the time to make your plans to attend. It is imperative this year, perhaps as never before, that officers and delegates of county societies attend the business sessions of the House of Delegates in full numbers. The Reno County Society has arranged an interesting program and fine entertainment. Your hosts will be happy to see each one. You will be better informed on medical society matters for having attended and will be royally entertained. Bring your wife and we'll see you in Hutchinson.

Fraternally,

Glenn R Peters M.D.

President

The Business Side of Medicine

A Comparison of Permanent and Term Life Insurance

FLOYD F. WEHRENBERG, ***Kansas City, Missouri***

Many articles have been written and much discussion carried on concerning the most economical form of insurance to carry. For some years we have recommended term insurance for temporary short term needs and ordinary or whole life for permanent needs. Our reason for this recommendation is that if you live to retirement age, ordinary or whole life insurance will have the lowest net cost. In comparing cost it is necessary to assume survival to retirement age. Obviously, if death occurs shortly after taking out insurance, term insurance would have been least expensive but there is no way of knowing this in advance. Our primary goal is to provide the necessary insurance protection in case of death in a form that will return the largest portion of your premium in case you live.

Comparison of Term and Ordinary

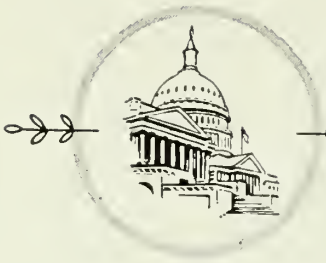
In order to compare the net costs of term insurance and ordinary or whole life, we have prepared the following illustration. Let us assume that the policyholder takes out a $10,000 policy at age 35 and it is carried to age 65. We are also considering a 3 per cent return on the premium difference between the two types of contracts on the assumption that the premium difference would be invested to realize that yield. The term contract shown here is a 10-year renewable term policy requiring a premium for the age attained at the end of each renewal period.

In making this comparison, we have used present estimated figures of one of the low cost insurance companies. The difference in this example amounts to $4,715 for a $10,000 policy carried 30 years. From this it can be seen that if you carry a $50,000 life program over a period of 30 years, the saving would be $23,575, which illustrates the dramatic cost advantage of ordinary or whole life over term insurance. For this reason we recommend conversions from term to ordinary life insurance as early as possible, since each year of delay represents a definite dollar loss to you. It is our belief that term insurance can be used to definite advantage only for needs that will exist a relatively short period of time, or to enable a person to carry more insurance until such time as conversion is economically possible.

	Term Ins. to Age 65	*Ord. Life to Age 65*
30-year Premium Outlay	$6,903	$8,450
Assum. Div. Age 65		2,614
Cost of Insurance	$6,903	$5,836
Cash Value at Age 65		5,658
Insurance Cost to Age 65	$6,903	$ 178
Funds Available From Depositing Premium Difference to Earn 3 per cent	2,010	
Net Cost to Age 65	$4,893	$ 178

(Continued on page 197)

Mr. Wehrenberg is Missouri-Kansas manager, Professional Management Midwest, 4010 Washington Street, Kansas City, Missouri.



Washington HIGHLIGHTS

This summary of Washington news is prepared by the A.M.A. Washington Office for distribution to state medical journals.

Medical Care for Aged Ahead

Congress appears headed for a showdown this session on legislation for the Federal government to provide medical care for aged persons.

The medical profession and allied groups stepped up their activities in opposition to such legislation as indications mounted that the issue was approaching a crucial stage. Several State Medical Societies planned to send delegations to Washington to personally express their opposition to their Congressmen.

Pressure behind such legislation began to build up early in February.

The Eisenhower Administration announced it was working on three possible programs for providing health care for aged persons in cases of castastrophic —lengthy and costly—illness.

Possible Change

Without amplification, President Eisenhower told a news conference that there was under consideration "a possible change" in the Social Security Act "to run up the taxes by a quarter of a per cent to . . . make greater provision for the care of the aged." The President's statement that "there has been no conclusion reached in the administration" was backed up by Arthur S. Flemming, Secretary of Health, Education, and Welfare, in a clarifying announcement.

Flemming said his department was working on two other approaches to what he called a serious problem in addition to the possible revision of the Social Security law mentioned by Mr. Eisenhower. The HEW Secretary said consideration also was being given to: 1) stepped-up Federal assistance under the Federal-state public assistance program, and 2) the Federal government supplementing voluntary insurance programs.

Flemming again expressed opposition to the Forand bill which would increase Social Security taxes by one quarter of one per cent each on employers and employees to provide hospitalization, surgical benefits and nursing home care for Social Security beneficiaries. The Secretary said he wanted to "underline that the position of the administration is opposition to the Forand bill."

Flemming said he hoped to have an administration bill ready to submit in early April to the House Ways and Means Committee where the Forand bill is pending. The Committee is scheduled to take up in late March or early April proposed changes to the Social Security Act.

Proponents of the Forand bill—which is vigorously opposed by the American Medical Association and allied groups—were pointing their campaign toward securing the House Committee's approval of the legislation at that time.

Labor Favors Forand

The AFL-CIO, a main supporter of the Forand bill, urged labor union members to write to congressmen on the Committee urging them to vote for it. The AFL-CIO also distributed a pamphlet quoting a handful of physicians as supporting the legislation. But the labor organization didn't mention that the overwhelming majority of doctors oppose it.

McNamara Reports Findings

The Senate Subcommittee on Problems of the Aged and Aging, headed by Sen. Pat McNamara (D., Mich.), issued on behalf of its Democratic majority a report stating that use of the Social Security program "is the most efficient procedure for providing" health care for older persons.

The A.M.A. and the Subcommittee's Republican minority promptly disputed this conclusion. An A.M.A. statement issued in Chicago said:

"The American Medical Association today sharply disagreed with the recommendation of the McNamara subcommittee regarding government medicine for Social Security beneficiaries.

"Dr. Louis M. Orr, Orlando, Florida, President of the A.M.A., said: 'This is a politically inspired committee. Senator McNamara, Democrat from Michigan, has long supported political medicine. The fact is that at the seven subcommittee hearings held throughout the United States, observers heard little support expressed by the older citizens who attended the hearings for government medicine financed by additional taxes and administered through Social Security.' "

(Continued on page 197)

Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. *Notice of the session is posted in advance to allow the physician time to make preparations.*

The next scheduled examinations of the American Board of Obstetrics and Gynecology (Part II), oral and clinical for all candidates will be conducted at the Edgewater Beach Hotel, Chicago, Illinois, by the entire Board from April 11 through 16, 1960. Formal notice of the exact time of each candidate's examination will be sent him in advance of the examination dates.

Candidates who participated in the Part I Examinations will be notified of their eligibility for the Part II Examinations as soon as possible.

The deadline date for the receipt of New and Reopened Applications for the 1961 examinations is August 1, 1960. Candidates are urged to submit their applications as soon as possible before that time to Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

The German Medical Association, host for the XIVth General Assembly of The World Medical Association in Berlin, September 15-22, 1960, has requested that we extend to each of you its cordial invitation to attend this meeting. Special plans are already far advanced for this meeting. The German Medical Association has scheduled its own Annual Meeting in conjunction with the General Assembly and the opening and closing plenary sessions of the two organizations will be held together. Both meetings and all activities associated with them will be held in the new Berlin Convention Hall. This will facilitate attendance at those sessions of each meeting which are of most interest to the individual doctor. In addition to the regular features of each Annual Meeting, an International Film Program is scheduled during the entire period—its theme: Postgraduate Education.

The Annual Dinner on September 19 will be held at the world famous "Palais am Funkturm." The Excursion on September 22 will include a sightseeing tour through the East Sector of Berlin and will end with a cruise on Havel Lake.

The Business Side of Medicine

(Continued from page 195)

Ideal Combination

The ideal combination when beginning an insurance program is to use decreasing term riders such as family income and mortgage redemption. These riders fill the need for temporary or decreasing amounts of insurance at the least cost. However, to utilize these riders it is necessary to purchase permanent type policies, such as ordinary or whole life.

As a result of the tremendous difference in net costs between companies and types of policies, savings amounting to thousands of dollars can be realized over a lifetime by proper organization of your insurance program.

Washington Highlights

(Continued from page 196)

The Republican minority stated that testimony before the Subcommittee "proves that it is possible for elderly people to secure private insurance to provide hospitalization and surgical benefits without any intervention by public authorities."

Kennedy's Bill

Sen. John F. Kennedy (D., Mass.), a leading contender for the Democratic nomination for President, introduced legislation similar to the controversial Forand bill but broader in scope. The Kennedy bill would eliminate surgical benefits but would add diagnostic outpatient and home nursing services.

KMS Obituaries

CLYDE WILSON, M.D.

Dr. Clyde Wilson, 76, who has been a physician and surgeon in Emporia for 50 years, died January 17, in St. Mary's Hospital, after suffering a heart attack.

Dr. Wilson, the son of Newton and Frances Pamela Ridenour Wilson, was born November 13, 1884, on a farm near Lang. He was graduated from the medical school of University of Louisville, Kentucky, in 1909. He did graduate work at Johns Hopkins University, and had his surgical fellowship at the Mayo Clinic. In 1927 he was one of 104 doctors who spent two months in Europe doing postgraduate study under the sponsorship of Dr. Charles Mayo.

Among his survivors are his wife, a son, Clyde Newton Wilson; and a daughter, Dr. Barbara Wilson.

Dr. Wilson became a member of the Kansas Medical Society in 1938.

F. W. LEMON, M.D.

Dr. Frederick W. Lemon, 84, retired physician who had lived in Salina two years, passed away January 19 in the Asbury Hospital, two days after being admitted there for treatment. Death was ascribed principally to his advanced age.

Among his survivors are a daughter, Mrs. C. B. Gibson, three grandchildren, and two great-grandchildren.

Dr. Lemon was a member of the Masonic Lodge at Douglas, and Midian Shrine of Wichita.

He was born March 5, 1875, in Lincoln, Missouri. He graduated from the Beaumont Hospital Medical College at St. Louis, Missouri in 1901.

He was a member of the Butler County Medical Society and joined the Kansas Medical Society in 1933. His specialty was general practice.

E. H. DECKER, M.D.

Dr. Ernest H. Decker, 64, Topeka dermatologist, died January 26 in a Topeka hospital. He was stricken at his office in the Mills Building.

Dr. Decker was born July 20, 1895, at Girard and was graduated from the University of Missouri in 1922 and from the St. Louis University Medical School in 1924.

He came to Topeka in 1930 and became associated with the late Dr. Arthur D. Gray in the Mills Building.

He served his internship at St. Mary's Hospital in Kansas City and took special training under the late Richard L. Sutton in Kansas City. He served in the U. S. Army Medical Corps during World War I.

He was associated with the Santa Fe Hospital from 1930 to 1939 and was consultant at the Winter General Hospital during the war years.

He was a member of Grace Cathedral, a past president of the Shawnee County Medical Society and a member of the American Medical Association, Sigma Epsilon social fraternity, Phi Beta Pi medical fraternity, and Capitol Post No. 1, American Legion.

He is survived by his wife, Mrs. Grace Decker, three sons, Donald H. Decker, James B. Decker and Paul A. Decker, a daughter, Mrs. Jane Rodgers, and 10 grandchildren.

Scientific
ARTICLES

Ureteral Stones

Cystoscopic Removal by Means of Davis Loop Extractor

JOHN W. WARREN, JR., M.D., ***Wichita***

SINCE THE TIME of the first cystoscopic examination of the bladder, it has been the ambition of various urologists to devise an instrument for the removal of small ureteral stones. This has resulted in the invention and perfection of instruments such as the basket and corkscrew. In April, 1953, Thomas A. Davis presented his loop extractor to the Western Section of the American Urological Association. This paper was later in the *Journal of Urology*, and since that publication I have used the instrument exclusively.

Components

The instrument consists of a No. 6 olive tip catheter with a single filament nylon suture piercing the catheter at the 10 cm. mark and re-entering the catheter at both sides at the 15 cm. mark to traverse the lumen to the end. It is used by inserting it past the ureteral calculus, then forming a loop by tension on the nylon sutures. The loop is held in position by clamping the sutures as in the photograph *(Figure 1)*. The operator gradually withdraws the instrument until resistance is met indicating the stone has been engaged *(Figure 2)*. Further gradual tension is exerted until the loop is withdrawn from the ureteral orifice completing the operation. If the stone becomes disengaged the loop can be relaxed by releasing the nylon suture and another "pass" can be made as the tip of the catheter is already beyond the stone. Occasionally a stone too large for such extraction is encountered and, in this event, release of the nylon sutures collapses the loop and the instrument can be removed. As it is normally a catheter, it may be left in place to drain a hydronephrotic kidney. Cystoscopic removal of ureteral stones is preferred over the "wait and watch" method as the obstruction to the urinary flow is sooner relieved and the damaging back-pressure removed from that kidney. Return to work is much earlier and the anxiety caused by the constant threat of renal colic is relieved. Its advantages over that of open removal of a stone are obvious.

The results of the attempt to remove 37 ureteral stones using the Davis stone extractor have been presented. Eighty-seven per cent were successfully removed and 13 per cent were failures. It is a worthwhile procedure for removal of small stones from the lower third of the ureter.

Personal Usage Experiences

The extractor has been used by me with 36 consecutive patients. All were stones in the lower third of the ureter with the smallest diameter 0.5 cm. or less. Most of these were watched varying lengths of time for spontaneous passage and the extractor used only when passage seemed unlikely. The operation was deemed successful when: (1) the stone was removed immediately; (2) the stone was broken up

and came out as sand (proof of removal furnished by negative x-ray film); or (3) spontaneous passage of the stone within 72 hours after the operation. The latter course happens frequently and is due to the dilatation of the intramural portion of the ureter by the withdrawal of the loop.

In the 36 patients comprising this series, 37 stone extractions were attempted. The procedure was done on one patient twice several months apart for different stones. There were five failures—four in which the instrument could not be passed beyond the stone, and one in which the stone was too large to be extracted in this manner, when open ureterolithotomy was necessary. The stone was flat and had been seen on edge in KUB x-ray. When grasped by the loop, it was rotated showing that it was much larger than had been realized. Of the 32 extractions deemed successful, 14 stones were removed at the time of the extraction, six were passed spontaneously within 48 hours, and 12 were broken up and passed as "sand." Removal of the latter was confirmed by x-rays disclosing the absence of the previously noted stone shadows. Eighty-seven per cent of the stones were successfully extracted and 13 per cent were failures. There were no complications.

Interesting Statistics

Other interesting statistics have appeared in this study. Half of the patients were in the 31-50 year age group, and men outnumbered the women by 21 to 15. Contrary to the belief that stones in Kansas are formed during the hot dry summers, and that symptoms would be more common in the autumn, 17 or 47 per cent were found in the March-April-May period. As spinal anesthesia seems to promote more ease of the operation, it was used 27 times and general anesthesia 10 times.

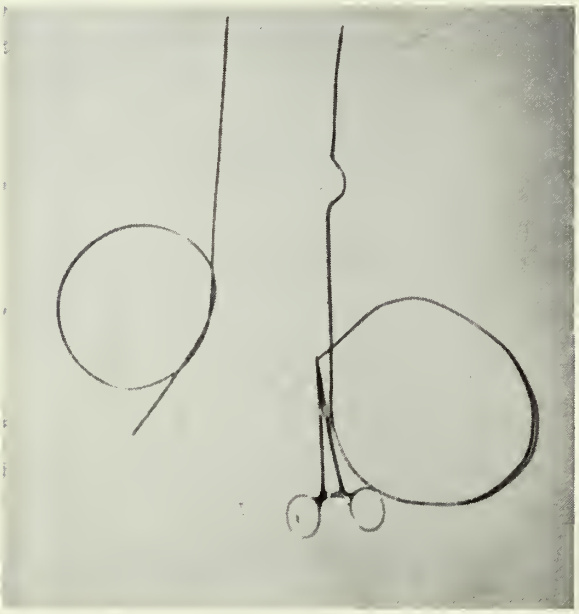


Figure 1. Stone extractor (left) as it is inserted and (right) with the loop formed.

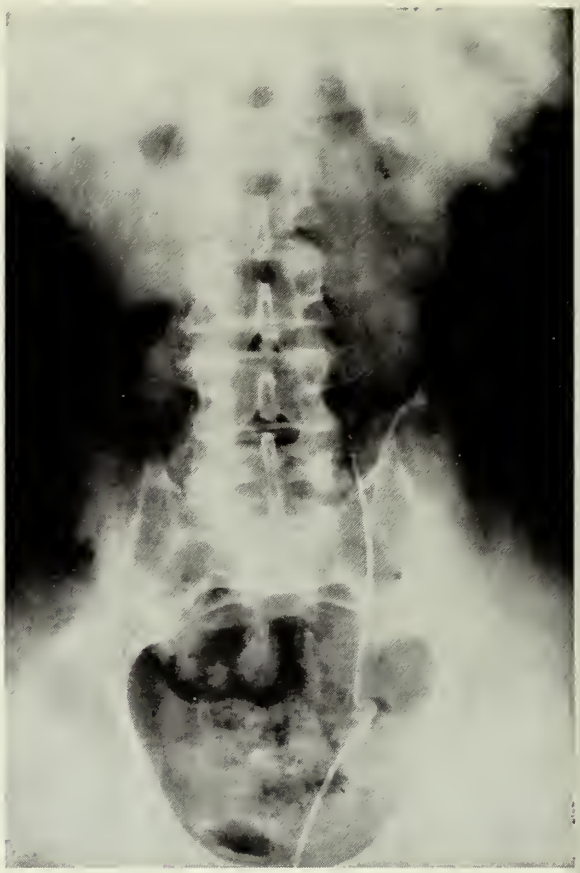


Figure 2. Stone caught in the loop.

Department of Urology
The Wichita Clinic
3244 E. Douglas
Wichita 8, Kansas

Reference

1. Davis, Thomas A.: Removal of Ureteral Calculus by a New Catheter Extractor. J. Urology, 72:346-349, 1954.

Man is set within limits—the limits of a created existence. If we recognize that there are limits, every new discovery raises a question. Because we can all own automobiles, it does not necessarily follow that it will benefit everybody to own one. Because we can fly to the moon, it does not necessarily follow that we should. . . . Past generations developed patterns of Christian living suited to their tastes and opportunities; we of the mid-20th century have not developed a pattern into which proper use of the abundance of our industrial age would easily fit. We must then find the pattern.—*Denys L. Munby*

Trochlear Nuclei

Changes Following Injection of Tetanus Toxin in the Superior Oblique Muscle

LADENE A. TERRY, A.B., *and*
HOWARD A. MATZKE, Ph.D., *Lawrence*

THE MODE OF SPREAD of tetanus toxin in the body and the type and pattern of pathologic changes occurring in tetanus are still subjects of considerable controversy. If the toxin ascends the nerve innervating the injected muscle to the nucleus of origin of these fibers, it should be possible to demonstrate a set pattern of symptoms and pathologic changes. This would be true particularly if the involved nucleus, nerve and muscle were related solely to each other. Such a relationship exists between the trochlear nucleus, trochlear nerve and superior oblique muscle of the orbit. The present investigation was undertaken in order to determine whether the symptomatology and pathologic changes were constant following injections of toxin into the superior oblique. The results may help to resolve problem relating to the mode of spread of tetanus toxin and the pathologic changes in tetanus.

Materials and Methods

Eight chinchillas varying in weight from 300-475 grams were used, since it was found their superior oblique muscle was larger and more readily accessible than in other rodents. The superior oblique muscle was injected with tetanus toxin using a micrometer syringe to which a 33 guage hypodermic needle was mounted. In six animals the dosage used was .0015cc/100 gram body weight of a 1:475 dilution of the stock solution. Two animals, which were sacrificed 15 days after injection, were injected with .002cc/100 gram body weight of a 1:475 dilution. Dosage administered was based on the LD 50 determined for rats by Fedinec and Matzke. Since the chinchilla is also a rodent it was felt that susceptibility in the animals would be similar.

The development of symptoms was observed and recorded. One animal each was sacrificed at four, five, seven, eight, nine, and 10 day intervals after injection. Two animals were sacrificed 15 days after injection.

The animals were perfused with 0.9 per cent NaCl and 10 per cent formalin. The midbrain was removed, sectioned, and stained by Nissl's method. Sections were cut at 10 microns and every fifth section was mounted and stained. The tissue from the nine day chinchilla was cut at 20 microns. In order to study chromatolytic changes, all the neurons in alternate sections through the trochlear nucleus were counted with the aid of an ocular micrometer. Due to faulty staining only one section of the nine day chinchilla was counted.

A separate count was kept of the neurons of the right and left nuclei. These were so similar that they were totaled together in the final computations. The total number of neurons counted was determined and the percentage of chromatolyzed cells for each animal was computed.

Since chromatolytic changes of some degree may appear in neurons of normal animals, the midbrain of a control animal was sectioned and stained by the same method as the experimental animals. Sections through the trochlear nucleus were studied and the number of chromatolyzed cells recorded.

Bilateral chromatolytic changes appeared in the trochlear nucleus after the unilateral injection of tetanus toxin into the superior oblique muscle. By the fourth day after injection 71 per cent of the neurons showed chromatolytic changes. The per cent of chromatolytic cells increase progressively until the eighth day after injection, when 99 per cent of the neurons showed chromatolytic changes.

It would appear that tetanus toxin may reach the trochlear nucleus from the superior oblique muscle by way of the tissue spaces of the trochlear nerve.

From the Department of Anatomy, University of Kansas, Lawrence, Kansas.

Supported in part by grant B609 (C2) of the National Institute of Neurological Diseases and Blindness, USPHS. Tetanus toxin supplied through the courtesy of Eli Lilly & Co., Indianapolis.

Mrs. Terry is a third year Medical Student.

Results

On the third day after injection the vibrissae on the injected side became paralyzed. Paralysis of the vibrissae on the opposite side occurred on the fourth or fifth day. "Ruffling" of the fur and depression of the ears, indicating involvement of the facial muscles, appeared on the fifth day, and was more on the injected side. Convulsions were present by the eighth day, and often blood appeared around the mouth.

Chromatolytic changes were observed bilaterally in the trochlear nucleus on the fourth day after injection. The neurons counted were divided into four categories. The first category consisted of neurons showing the normal Nissl pattern. The second category comprised chromatolytic cells in which the Nissl substance was dustlike; this was often accompanied by swelling of the cell. The third category consisted of neurons which had chromatin masses concentrated at the pole of the nucleus, *i.e.*, nuclear caps. The neurons of the fourth category were hyperchromic; many were also smaller, indicating shrinkage.

In the animal sacrificed on the fourth day after injection 71 per cent of the total number of cells counted showed chromatolytic changes. Eighty-seven per cent showed chromatolytic changes on the fifth day, and 96 per cent, by the seventh day. In animals sacrificed after seven days 99 per cent of the trochlear neurons showed chromatolysis. Table I gives the number of cells showing the chromatolytic changes categorized above.

More than 99 per cent of the neurons showed chromatolysis in animals sacrificed 15 days after injection; however, the cells were not classified according to degree of chromatolysis.

In the normal control animal scattered mild chromatolysis and nuclear caps were present bilaterally in the trochlear nucleus. The number of cells exhibiting these changes did not exceed five per cent of the total number of neurons in the nucleus.

Discussion

Nissl bodies normally appear as basophilic, irregular blocks or granules in the cytoplasm of most nerve cells. In chromatolytic changes the Nissl substance may appear as dustlike particles; chromatin may be heavily massed in a nuclear cap; or the cell may be hyperchromic and shrunken. These chromatolytic changes are characteristic of injury to the neuron, and may be observed in injury from many different sources. Chromatolytic changes may also be a result of fatigue.

Curling (cited by Fedinec and Matzke) in 1836 stated that, "There are, therefore, no morbid changes peculiar to tetanus, and by which it can be recognized." Later in the 19th century Beck and Nissl (cited by Baker) reported pathologic changes caused by tetanus toxin in the central nervous system of experimental animals. They reported a "patchy" involvement of the anterior horn cells, consisting of swelling of the cell body, peripheral chromatolysis, and some nuclear pyknosis.

TABLE 1

TOTAL NO. TROCHLEAR NEURONS COUNTED FOLLOWING TETANUS TOXIN INJECTION

Days After Injection	*Nuclear Caps*		*Hyperchromic*		*Chromatolized*		*Normal*		*Total*	
	R	L	R	L	R	L	R	L	R	L
4	1	1	22	19	83	105	59	36	165	161
									326	
5	1	5	0	3	203	230	28	36	232	274
									506	
7	0	2	13	30	212	239	8	10	233	281
									514	
8*	1	0	170	160	93	110	3	1	267	271
									538	
10	1	1	21	35	307	334	0	2	329	372
									701	

R=Right Side L=Left Side

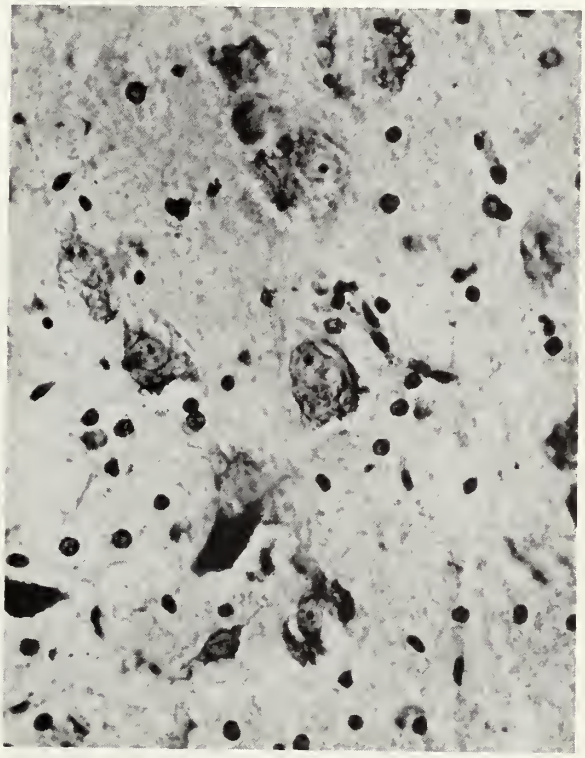
* This animal injected on the left side; all others injected on right side.

In a later study on 12 fatal human cases, Baker observed that tetanus toxin almost invariably produced damage to the central nervous system that could be shown microscopically. Changes in the neurons were observed as early as the third day of illness. The nerve cells showed a patchy involvement, and the alterations which appeared earliest were mild swelling and partial chromatolysis. There was a tendency for the earliest and most extensive changes to appear within the cells in the vicinity of moderately sized blood vessels. As the illness continued the cell changes became more intense. Chromatolysis became more complete and showed a tendency toward being perinuclear, while the nuclei were displaced peripherally and were often pyknotic.

In Baker's study the neuronal changes were patchy and tended to show perivascular distribution. In the present experiment a single muscle (superior oblique) innervated exclusively by the trochlear nerve with its own discrete nucleus was used. The most intensive involvement was in the trochlear nucleus. It appears that the toxin reached this nucleus first, and in relatively large amounts. Other neurons, such as those in the oculomotor nucleus, exhibited some chromatolysis. These changes first appeared on the fifth day following injection, and at no time were as extensive or severe as in the trochlear nucleus. It is possible that some of the toxin was distributed by the blood; the results of the present investigation do not affirm or deny this conclusion.

It is interesting to note that the symptoms did not appear on both sides simultaneously even though chromatolytic changes in the neurons were comparable by the fourth and fifth days. Since the chromatolysis was so extensive by the fourth day, it would seem that changes might have been observed even earlier than the three-day lesions observed by Baker. Neuron counts were not made on the third day when symptoms were first observed on the injected side. According to Jonkowsky and Barros (cited by Baker) cellular damage may exist before symptoms become apparent.

The bilateral chromatolytic changes observed in the trochlear nuclei raise the question of the mode of spread of tetanus toxin to the central nervous system. It is generally accepted that tetanus toxin is transported by the blood stream, but apparently this is not the only route by which tetanus toxin may be distributed in the body. The recent study of Fedinec and Matzke confirmed the fact that an animal may develop tetanus when the circulating toxin is neutralized by antitoxin. One possible route to the central nervous system for tetanus toxin is by way of the axons of peripheral nerves. The investigations of Fedinec and Matzke,[1, 3] however, indicate that this is not the case. They demonstrated that in the absence of nerve fibers to an intramuscularly injected extremity, local tetanus first appears in those muscles whose intact innervation is from the same or adjacent spinal cord segments that supplied fibers to the denervated injected muscles. This was true only if the connective tissue sheaths of the nerves to the denervated, injected extremity were intact. They also demonstrated that the time of appearance of the symptoms of local tetanus is independent of the number or size of the nerve



Hyperchromic and chromatolyzed neurons from 10 day animal, × 375, cresyl violet stain.

fibers to the injected extremity, and that local tetanus would not develop if the epineurium were removed and the perineural septa teased open. They suggest that the probable route to the central nervous system for tetanus toxin is by way of the tissue spaces in the peripheral nerve trunks.

If the tissue spaces of the trochlear nerve are directly continuous with the tissue spaces of the central nervous system on both sides, the bilateral chromatolytic changes could be explained on the basis of the tissue space spread of toxin.

Panomarew (cited by Fedinec and Matzke) and his associates demonstrated a direct connection between the perineural tissue spaces and subarachnoid spaces. According to their work, the rate of centripetal movement along the nerve trunk is dependent on the

(Continued on page 213)

Peyronie's Disease

Its Association Between Gout and Trauma

BROMELL M. MARSHALL, M.D., ***Topeka***

PEYRONIE'S DISEASE IS usually seen as a fibrous type of nodule on the dorsum of the shaft of the penis just behind the corona. It may occur at any point along the shaft, sometimes causing curvature of the shaft. Since the disease is usually first seen and treated by general practitioners and general surgeons, it was felt fitting that perhaps this disease should be discussed in a journal of general medical distribution.

This is a fairly common condition. It goes under almost a dozen different names and there have been a dozen different etiologies suggested for it. Also there have been far more than a dozen different treatments advocated. Bearing these facts in mind we have little to offer except we have noticed the close association between gout, trauma, and Peyronie's disease in a number of cases.

Peyronie's Disease and Gout

The association between Peyronie's disease and gout was first called to the physicians' attention in the medical literature by Otto Sachs in 1901. He also mentioned diabetes and trauma in this paper.

Peyronie's disease has been called plastic induration of the penis, chronic cavernositis, circumscribed fibrosis of the shaft, indurated cavernositis, plastic induration of the corpora cavernosa, etc. It has been confused with keloids of the shaft, syphilitic gummata, inflammatory sclerosis, fibromata, condromata, and even os penis. Fibrosis follows trauma and inflammation, diabetes, gout, granuloma inguinale, alcohol, tobacco, sclerotic, and proliferative diseases of the vascular system. Its association with Dupuytren's contracture has been noted.

Treatment

Treatment of this condition has included deep x-ray therapy, local raduim applications, excision and replacement with lipoid tissue, ultra-violet, diathermy, high frequency sound, electrolysis, positive and negative pressure cups, hot applications, injection of cortisone in the lesion, injection of hyaluronidase or a combination of both, injection of fibrolysin in the lesion, injection of autogenous vaccine, topical application of iodine, mercury compounds, camphor and iodoform; potassium iodide, arsenicals and alpha tocopherol by mouth, sodium iodide intravenously, etc.

There has been so much confusion in the literature concerning exactly which lesion should be classified as Peyronie's disease, and which lesion should not, that it is difficult to give a discussion of etiology and treatment. Certainly microscopic appearance of Peyronie's disease is similar to keloids, yet if the keloid formation were to involve the skin most men would say that this was not Peyronie's disease. While cartilage and even osseous tissue have been found in portions of the fibrous tissue constituting Peyronie's disease, yet no osteoblasts or osteoclasts have been found, neither have there been found haversian systems, as opposed to os penis in which haversian canals and lamella have been found, but no osteoblasts and no osteoclasts.

The purpose of this paper is to call attention to the half forgotten relationship between gout and Peyronie's disease. Etiology, differential diagnosis and pathology have been touched on. Careful scrutiny of the patient's occupational possibilities of trauma, sexual possibilities of trauma, and pathology in the sexual partner has been urged. Many types of treatment have been mentioned; the most successful in our hands has been colchicine. No relationship between Peyronie's disease and uric acid or urate excretion has been noted. Although most authors state that Peyronie's disease occurs mainly after middle life, yet we have all seen it quite frequently in men in their 20's and 30's.

Injury Results Like Peyronie's Disease

Some authors state that fibrous tissue resulting from a single traumatic incidence is not Peyronie's disease. Frequently one sees such incidences in industry when boxes or tools are dropped on the pelvis and the proximal shaft of the penis. Following the incident a fibrous plaque arises which, to all intents and purposes, behaves as does Peyronie's dis-

ease. Many other authors feel that Peyronie's disease arises from repeated trauma as in the act of coitus. It seems rather academic to us that any distinction should be made between fibrous tissue plaques arising in Buck's fascia and the sheath of one or both corpora cavernosa, arising from one single trauma or from repeated trauma.

In every case of Peyronie's disease, I believe it is the doctor's duty to examine the sexual partner (even though the sexual partner is not the legal wife). The physician should inquire into the coital habits. For example, it has frequently been found that where the plaques exist on the left side of the shaft and the curvature is to the left the sexual habit is for the man to be lying so that the left side of his penis will strike the pubic bone of his sexual partner. Some women have a forceful habit of striking down with the symphysis pubis. Lesions have also been found where the sexual partner has a well developed caruncle of the urethra or a well developed erosion or ulceration of the cervix. A pathological lesion should be looked for, as no treatment will probably halt the progress of the disease if repeated trauma is still perpetrated. Some authors list unnatural sex acts as an etiological factor. The youngest case we have seen mentioned in the literature was 22, the oldest 80.

The examination of the man should include a Wassermann test and tests for granuloma inguinale, yet these conditions are so rarely an etiological factor that we have personally never seen them. It is probably well to inquire into the vascular history of the patient as well. We have never been certain that diabetes has an important influence on Peyronie's disease. We doubt that tobacco has an influence. Alcohol probably has an effect only as it affects the sexual habits and also the dietary habits, and hence the severity of gout that the patient may or may not have.

Of all the etiological factors, it has been our observation that gout is a frequent associate of Peyronie's disease and that trauma, in the presence of gout, will more likely produce a fibrous plaque than if gout had not also been present. We have found a number of cases of gout that have first presented themselves solely as Peyronie's disease. It must be borne in mind that a high blood uric acid level is not always necessary for the diagnosis of gout. One will remember that sometimes during severe exacerbations of gout the blood uric acid level is low, compared to the uric acid level in the same individual during a period of quiescence. Uric acid deposits have never been described in the fibrous plaques of Peyronie's disease; rarely some have been found subcutaneously. However, there are not many plaques that are removed because sometimes the disease is aggravated by surgery. Neither have we seen uric acid or urate crystalluria as described in cases of gout. No general increase of uric acid excretion has been noted. For this we have no explanation.

Nevertheless, in our experience, colchicine has given us better results in the treatment of Peyronie's disease than any other drug or therapy that we have used. This is not a cure because, of course, gout so far has never been cured. Also, the diet is all important—a low uric acid diet must be used as there is no drug that will cause excretion of sufficient uric acid in the presence of a high uric acid diet. In the cases that we have had the privilege of observing, colchicine has been more effective than aspirin alone or than the new drugs such as benemid®. A combination of drugs is sometimes effective. Combination with injections of cortisone or allidase have not been found particularly effective. Although some complete cures have been reported by surgical excision and implantation of lipoid tissue, as described by Lowsley, many recurrences have been reported following surgical excision. Cures following the use of radium have been reported but not generally observed.

704 Mills Building
Topeka, Kansas

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Massive Intravascular Hemolysis

Variations in the Response of Humans to Venom

R. G. WEINER, M.D.; R. P. STOFFER, M.D.; FRANCIS W. CHORNOCK, Ph.D.; *and* R. B. YOUNG, M.D., *Halstead*

The response of the human to the venom of snakes, spiders, insects, and scorpions is extremely variable. We wish to report the case of a child, previously in good health, who developed a massive intravascular hemolysis, approximately 24 hours following exposure to venom from an unknown source.

Case History

A SIX-YEAR-OLD, 45 pound girl was admitted to the Halstead Hospital, Saturday, May 23, at 4:30 p.m., 1959. Her mother stated that the child had been well except for frequent colds during the winter. She had not had hay fever, asthma, allergic reactions, hives, skin rashes, or drug idiosyncrasies. At 4:30 p.m., May 22, the child told the mother that she had been bitten in the groin by "a little yellow bug" which we believe was the common brown spider (Loxosceles reclusus). This had apparently occurred in an upstairs bedroom where the child had been playing. The immediate effect did not cause alarm, and the mother applied Caladryl lotion to a small swelling on the right thigh near the groin. During the night the child did not seem to be feeling well and had chilly sensations with probable fever. At six o'clock the following morning the mother noted that the groin was slightly swollen, that the child had fever, and therefore aspirin was given, and hot soaks applied to the swollen area. The area of swelling increased slightly in size during the day, and there was continued fever. The mother noted that the child said she had urinated in the morning but that until about six p.m. May 23 there had been no further urination. The child had little to eat or drink during the day.

Physical examination revealed a temperature of 103°, a pulse rate of 96, respiratory rate of 20; blood pressure 110/70. The child appeared acutely but not alarmingly ill. The eyes, ears, nose, and throat were normal; the neck supple, there was no adenopathy; the lungs were clear to percussion and auscultation; the heart was regular in rhythm, no enlargement, no murmurs. The abdomen was soft, there were no masses or enlarged organs, there were several nontender nodes in both inguinal regions. There was moderate swelling of the right labium major, seemingly spreading from the medial aspect of the thigh. There was a small two to three mm. vesicle in the middle of an edematous area on the medial aspect of the thigh. The vesicle was opened and no stinger or fang marks were present. The admitting impression was that there was a hyperimmune reaction due to the bite of an unknown insect.

Upon Admission

On admission the hemoglobin was 12 gm. per cent, wbc. 17,900, the differential smear showed one per cent eosinophiles, 15 per cent stabs, 66 per cent segmented, 14 per cent lymphocytes, and four per cent monocytes. The six o'clock urine specimen when examined, was five oz. in volume, contained four plus albumin, had a specific gravity of 1.024, was acid in reaction, and there was neither sugar nor acetone. There were no red blood cells but a hemoglobinuria was present. At 10:20 p.m. the hemoglobin was four gm., and the hematocrit 17. During this period of time the physical condition of the patient worsened considerably. She was restless, although apparently not in pain, vomited repeatedly, and had repeated chilly sensations associated with an ashen pallor alternating with a pink, flushed appearance. The local lesion of the right leg progressed at a rapid rate. The thigh became swollen twice the size of the left thigh with an extension of the swelling and edema over the abdomen, both labia, and around toward the back and down to the left groin. Its color was blackish yellow. This local lesion appeared to progress for a period of two to three days, and then subsided gradually over a long period of time.

At this point it was apparent that a rapid intravascular hemolysis was taking place. On admission the child had been given penicillin, benadryl, 25 mg., I.M., and continuous ice packs to the perineum

From the Hertzler Research Foundation, and the Hertzler Clinic, Halstead, Kansas.

and right upper thigh. In addition, she had been given 40 units of aqueous ACTH in 500 cc. of five per cent dextrose in distilled water. She was then given 300 cc. of five per cent glucose in saline, followed by 200 cc. of 1/6 molar lactate solution.

The Next Twelve Hours

During the next 12 hours additional glucose in water was given. Hydrocortisone was administered intravenously in 100 mg. doses, every four hours; 500 cc. of packed red blood cells were given over a period of time, along with additional sodium lactate intravenously. A diuresis appeared at once, so that during the first 24 hours of treatment the total urine output was 2,240 cc. A diuresis due to a large fluid intake persisted through the acute illness. At first each voided specimen was either dark red or black in color, due to the presence of hemoglobin. The hemoglobinuria persisted 48 hours after admission, when it disappeared rather abruptly. There was a gross albuminuria but red cells did not appear in the urine. There were a few granular casts.

On the first day of illness 15 gm. of albumin appeared in a 1,200 cc. sample of urine, and on the second day 4.4 gm. were present in a 1,100 cc. sample of urine. The blood urea nitrogen reached a peak of 58 mg. per cent on May 26. On that same day the serum CO_2 was 38 mEq.; with a blood pH of 7.6. The administration of oral sodium bicarbonate and intravenous 1/6 molar sodium lactate solution was discontinued. On May 25 the serum CO_2 had been 32 mEq.; on May 27 the serum CO_2 was still 40 mEq.

Response to Transfusions

The response to transfusions was not immediate so that the hematocrit remained between 20 and 25. On May 27 the hematocrit was 25, the hemoglobin 8.5 gm. per cent. On that day, after further transfusions, the hematocrit rose to 37, hemoglobin to 11.5 gm. per cent, and remained at that level thereafter.

During the first 72 hours a total volume of 1,200 cc. of packed red blood cells were given. These transfusions were prepared by taking properly cross matched and typed blood, type A, Rh positive, and withdrawing the plasma after the red cells had settled to the bottom of the flask. No adverse reaction to blood was noted. In addition to large doses of hydrocortisone intravenously, benadryl, five mg. was given intravenously each two hours. The patient was sedated with small doses of demerol hydrochloride, and sodium phenobarbital.

The child appeared to be out of danger by May 28; at that time benadryl was discontinued and a gradual reduction in hydrocortisone was begun May 26 culminating in the transfer of the patient from hydrocortisone to oral prednisolone, five mg., q.i.d. on May 28. She was maintained on this dose until her discharge one week later. Subsequently the dose was decreased over a period of two weeks. The lesions at the site of the bite and catheter placement healed without incident. The patient had some facial changes (full cheeks) lasting three weeks after complete steroid withdrawal.

Comment

It seems clear that the acute illness was due to venom. The total clinical picture is compatible with this, and it would be difficult otherwise to explain the local lesion which developed. The source of the venom will never be known with certainty. The violent hemolytic reaction seems to be unusual, judging from previous reports regarding exposure to spider venom. During the first day of the illness the rapid intravascular hemolysis raised three primary problems: first, how to neutralize or destroy the hemolysin; second, how to care for the local lesion, and third, how to maintain the circulating red cell volume and protect the kidneys from the adverse effect of the massive hemoglobinemia and hemoglobinuria. The nature of the hemolytic system was not studied. The Coombs test was negative, as one would expect. It seems likely that the hemolytic system did not require participation of the patient's tissues in the production of antibodies. Benefit from the use of benadryl and hydrocortisone is difficult to assess. The replacement of red blood cells was, of course, crucial, and the rapid production of a diuresis and alkalosis by use of intravenous fluids, 1/6 sodium molar lactate solution and sodium bicarbonate, was undoubtedly helpful in preventing serious renal damage.

This patient's illness was a new experience for us. We hope that this publication will encourage others to report similar experiences and thus provide more information concerning the human response to venom in Kansas.

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Hertzler Research Foundation
Halstead, Kansas

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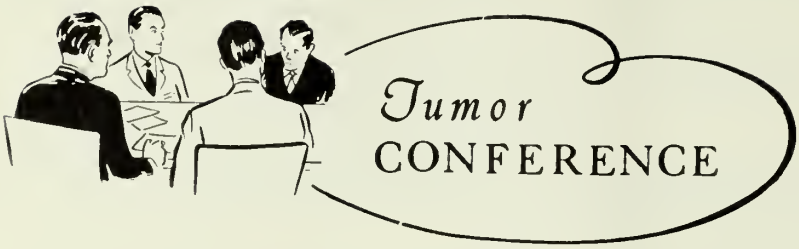
Panics, in some cases, have their uses; they produce as much good as hurt. Their duration is always short; the mind soon grows through them and acquires a firmer habit than before. But their peculiar advantage is, that they are the touchstone of sincerity and hypocrisy, and bring things and men to light, which might otherwise have lain forever undiscovered.—*Thomas Paine*



The Carotid Body Tumor (Chemodectoma)

Edited by CARROLL C. JONES, M.D.

Dr. Robinson (Moderator): This patient had a rare tumor of the neck that has specific diagnostic, pathologic, and therapeutic features which warrant consideration. Its study is valuable from the teaching standpoint since all the possible lesions causing a "swelling in the neck" must be considered.

Mr. Ball (Medical Student): The patient is a 23-year-old white female who was first admitted to the University of Kansas Medical Center on September 23, 1959, with the chief complaint of a tender mass below the angle of the left mandible. It was first noticed in July, 1956, when the patient had a sore throat and developed, rather quickly over a period of three hours, a mass in the left side of the neck comparable in size to that at the present admission. This mass has been intermittently symptomatic since that time. During such episodes, she would develop a sore throat with pain in the cheek, in the left mandible, and in the left ear. At the same time she would have severe nausea and vomiting, and would often have a high fever. These symptoms have increased in severity and frequency. She was hospitalized elsewhere in April, 1959, because of persistent vomiting. At that time, she was treated with parenteral fluids and antibiotics. The rest of the history is not contributory.

On physical examination the only significant finding was a smooth, rounded mass measuring three cm. x two cm. located under the angle of the left mandible and lying under the anterior border of the left sternomastoid muscle. It was tender to palpation and had a firm consistency. It was not attached either to the skin or to the mandible. Carotid pulsations could be felt through the mass, although no bruit was heard over it. The laboratory workup was not contributory, and no x-rays were taken.

Dr. Robinson: Thank you. It will be necessary to consider carefully a number of diagnostic possibilities as an approach to this problem. First, Mr. Ball, it might be helpful to review the anatomy of this area of the neck.

Mr. Ball: From the exterior, there is the skin with its appendages; the subcutaneous connective and adipose tissues; and the sternomastoid muscle. Blood vessels in this area are the common carotid artery with its bifurcation into the internal and external carotids, and the jugular vein. The carotid body lies at this bifurcation of the carotid artery. Several nerves also pass through this region. These include the spinal accessory nerve, the hypoglossal nerve, and the vagus nerve. Branches of the glossopharyangeal nerve and of the facial nerve are in this area. The parotid and submaxillary salivary glands are nearby and cervical lymph nodes lie in this area.

Dr. Robinson: The diagnostic possibilities in this case must include, among other things, the benign and malignant tumors arising from each of these aforementioned structures. A branchial cleft cyst, which is a cyst of an embryonic remnant, should be considered as well as the remote possibility of a dermoid cyst. One year ago we removed a large dermoid cyst from a similar area in a patient. An aneurysm of the carotid artery ordinarily would not be considered in a person this young, and carotid body tumors are rare. Metastatic carcinoma from the oro- and nasopharynx, as well as from the thyroid, commonly involve lymph nodes of this area. For that matter, tumors of other body regions, such as malignant melanomas or carcinomas of the breast, occasionally may metastasize to this area.

Cancer teaching activities at the University of Kansas Medical Center are aided by grants from the National Cancer Institute, U. S. Public Health Service, and from the Kansas Division of the American Cancer Society. Dr. Jones is a trainee of the National Cancer Institute.

What are the most likely diagnoses of this patient?

Mr. Ball: I would first think of tonsilar lymph node enlargement from acute lymphadenitis as a consequence of tonsillitis or another infection in the oral or nasal cavities.

Dr. Robinson: Lymph node enlargement itself suggests a fairly large differential diagnosis. Some of these already have been mentioned. With a history of swelling for three years we should consider chronic granulomatous involvement of lymph nodes such as tuberculosis, syphilis, sarcoidosis, brucellosis, and the fungus diseases. Histoplasmosis, cryptococcus, coccidioidomycosis, and blastomycosis are seen occasionally in patients from agricultural areas of this state.

There are also the primary neoplasms that affect lymph nodes, such as the malignant lymphomas, Hodgkin's disease and chronic lymphatic leukemia that must be considered.

What was the diagnosis when the patient was first seen at this institution?

Dr. Masters: The pre-operative diagnosis of the lesion was chronic, recurrently infected, branchial cleft cyst. This seemed consistent with the location and the character of the lesion and with the clinical history. At surgery, however, we encountered first a large plexiform network of veins covering a tumor near the carotid bifurcation. The mass was quite vascular and somewhat pulsatile. The common carotid artery entered the lower edge of the tumor, while the external carotid artery exited from the upper part. The internal carotid artery was not exposed. From the outer surface of the tumor we took a biopsy that was diagnosed chemodectoma on frozen section.

The biopsy site bled profusely and it was necessary to oversew the site with black silk in order to control the hemorrhage. Interestingly enough there were no changes in the patient's vital signs during the procedure. I closed the wound recognizing the dangers of proceeding further without preparation for a more extensive procedure.

Dr. Robinson: Dr. Hardin was asked to see this patient with the thought in mind that she might have to have vascular surgery with a resection and replacement of the carotid artery. Dr. Hardin, would you discuss your procedure?

Dr. Hardin: We operated on this patient because she had symptoms which we thought were referable to her tumor and because with any delay, further enlargement of the mass might endanger life by compression of the internal carotid artery while making surgical removal impossible. However, there are dangers peculiar to operations in this area of the neck. There is always the chance that the carotid circulation to the brain might be sacrificed in order to remove the tumor. The loss of internal carotid circulation is a potential danger to life and causes hemiplegia in roughly 50 per cent of cases. To avoid this we planned to use hypothermia, which would reduce the oxygen requirement of the brain, and to use if necessary a carotid by-pass shunt under heparinization which would allow an uninterrupted flow of blood to the distal carotid circulation.

Operating with the above precautions, we located the common carotid artery below the tumor and the internal carotid artery above the tumor. In order to gain easy access to the tumor, the external carotid artery and the jugular vein were sacrificed. The tumor peeled off the carotid bifurcation easily and showed no point of origin from it. This surprised me. I thought the tumor would arise out of and be firmly connected with the wall of the carotid artery. Postoperatively the patient did well and she was discharged four days after the surgery.

Figure 1. Gross appearance of the carotid body tumor.

Dr. Robinson: Did the patient show any unusual physiological changes during the dissection?

Dr. Hardin: Spurts of auricular fibrillation were detected on the cardiac monitor shortly after dissection was started. This may have been a result of carotid body stimulation; it is not an unusual happening in these operations. The pharmacologists warn against premedication with morphine and barbiturates in these operations and advise premedication with belladonna and anesthesia with cyclopropane or ether.

Dr. Robinson: May we have the pathologist's report?

Dr. Mantz: The gross specimen *(Figure 1)* is a somewhat ovoid discoid tumor which gives the appearance of being encapsulated. I suspect that this is more apparent than real since it could assume this

Figure 2. Cross section of same tumor showing the spongy appearance caused by large vascular channels.

appearance by concentric growth with pressure on the surrounding tissues. It has a fleshy or rubbery consistency with a spongy appearance that denotes an exceedingly high degree of vascularity *(Figure 2)*. A dark red-brown color would certainly suggest that a considerable degree of vascularity, if not hemorrhage, is present within it.

Histologically, the lesion is absolutely diagnostic and classical of a carotid body tumor and does not permit the elaboration of any differential diagnosis. A high degree of vascularity exists within it as a series of small irregular lake-like channels, which intermingle in a somewhat cirsoid fashion *(Figure 3)*. Some vessels are so small they are seen only at high magnification. Despite this spongy appearance there is an abundant cellularity. The "chief" cells composing this lesion are uniform, large, pale and pavement-like. They have centrally placed nuclei and a great abundance of clear cytoplasm *(Figure 4)*. Mitosis and the usual histologic criteria of malignancy are missing. The cells are arranged in characteristic "nests" or "Zellballen." Budding projections of nests into vascular spaces are highly characteristic of tumors of this type *(Figure 4)* and have led certain pathologists to call these lesions "budding tumors." Normal appearing endothelium lines the vascular spaces separating them from the nests of "chief" cells composing the main mass of the tumor *(Figure 4)*. Because of this fact, we cannot call the lesion a hemangioendothelioma. The tumor cells in this lesion, if it is necessary to categorize them, might be classed as perithelial cells.

Near the periphery there is a bundle of stromal-like elements in which the cells are arranged in an orderly pattern and appear somewhat wavy. I believe that this is a peripheral nerve fasciculus, probably of unmyelinated fibers.

In summary, I think we can state that there are three components of this neoplasm: 1) There are large vascular channels, which places it more or less in a category of a hemangiomatous lesion. 2) There are large pale cells which probably represent the fundamental unit of the tumor. 3) There are fibers apparently of neural origin. In general, these features are the characteristics of a whole group of related tumors of which the carotid body is one. The glomus tumor of subcutaneous tissues is the most common and the carotid body tumor is the second most common. There are a host of others which are all exceedingly

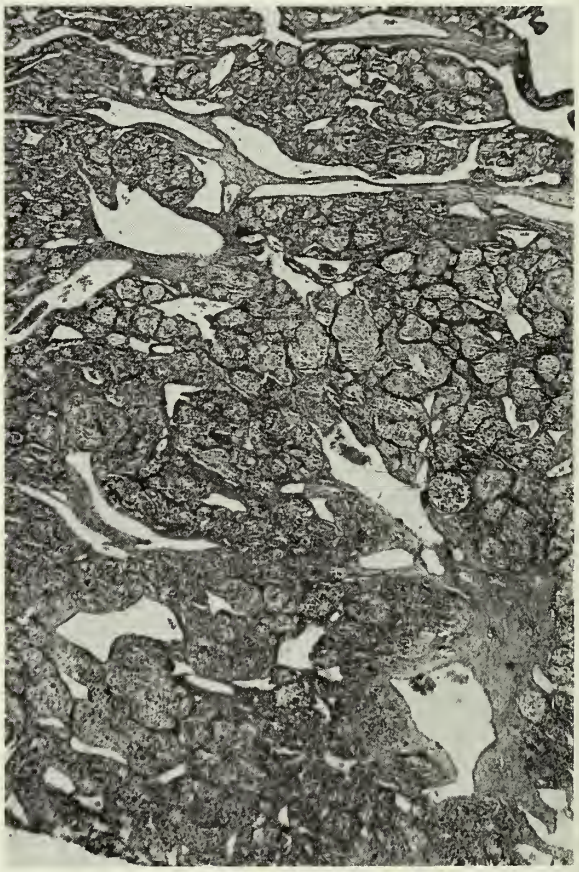


Figure 3. Section showing the irregular vascular spaces and the nests of "chief" or "perithelial" cells that make up the tumor. × 24 (Hematoxylin and Eosin).

rare: the glomus jugulare, which is familiar to the otolaryngologists; the aortic body tumor; tumors of the paraganglion tympanicum; and the so-called glomus coccygeum, a retroperitoneal neoplasm arising in the pelvis.

Dr. Hardin: Some aspects of the clinical history in this case are difficult to fit with the histologic lesion. The recurrent high fever, sore throat and tenderness at the angle of the jaw are characteristic of an infection. It may be that an infection was incidental to, but super-imposed on, her carotid body tumor.

If this tumor is related to the glomus tumors in some aspects of appearance and action, the factor of severe pain is missing in the present case. The histopathology of this lesion is benign, but because of the location of the tumor to the vital blood supply to the brain and its tendency to invade, it cannot be considered benign.

Dr. Mantz: Another term under which the carotid body can be classified is that of the paraganglioma because of their intimate relationship with various essential neural structures. However, one should always qualify this by saying that this is a non-chromaffin type of paraganglioma since all of the members of this group are incapable of elaborating epinephrine or other pressor substances. I think it is shown fairly conclusively that the normal carotid body is a chemoreceptor that is highly sensitive to changes in pH, and to the carbon dioxide and oxygen tensions in the circulating blood and thereby under certain conditions it influences respiratory rate and depth.[2]

Tumors of the carotid body are unusual in that they appear to grow sporadically with episodes of rather rapid growth followed by quiescence over variable periods of time, such as we have seen in this case. I now have seen seven of these tumors, but I have never been impressed with their encapsulation. It has been my observation that they tend to grow in a classic fashion, tending to encompass the adjacent vessels, as in the present case. I have been told of a case at Providence Hospital where a tumor of this kind had grown completely about the carotid artery and occluded it, but apparently the patient had not suffered any ill effects.

The earlier opinion regarding therapy of this lesion was that it should be left strictly alone. I certainly am not of that feeling. If one is dealing with this tumor when it is still relatively small and has not shown a locally aggressive type of growth, every attempt should be made to remove it surgically in order to prevent the ultimate symptoms resulting from pressure on adjacent structures and occlusion of the carotid artery from which it arises. The apparent gross inability to demonstrate vascular connections with the principal artery is not new at least in my experience. At one time I dissected out a number of carotid bodies at autopsy and on each occasion I was quite amazed that the only connections were tiny twig-like vessels from the adventitia of the principal artery.

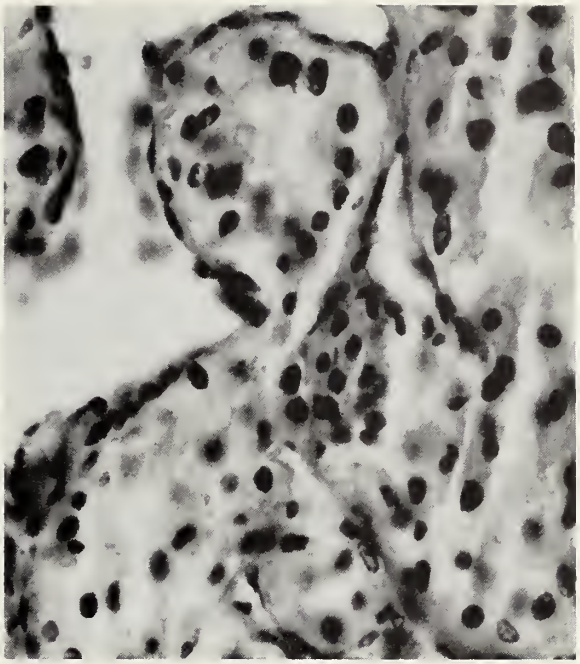


Figure 4. Higher magnification of the "chief" cell nests showing their relationship with the vascular spaces. A single layer of flattened dark cells (endothelium) lines the vascular spaces. × 400 (Hematoxylin and Eosin).

On the whole, histologic evidence of malignancy is usually lacking in these tumors. There have been some 400 cases of carotid body tumor described in the literature and probably in only five or six of these are there well documented and confirmed metastases.[3, 4] Malignancy, in other words, is usually by local invasion. This is quite a common problem and certainly justifies surgical removal of the tumor. It is important to remember that the lesion is not primarily a vascular tumor, but a tumor of a specialized cell which is actually extravascular, the so-called pericyte. The exact derivation of the pericyte has never been expounded. There are those who feel that it is of neural origin and therefore neuroectodermal; and those who feel that it is mesodermal, having a muscle-like function. When this tissue is isolated in tissue culture, it grows in a manner which was originally described by Zimmermann[4] when he established the so-called pericyte as an entity. At any odds, its function, when non-neoplastc, appears to be one of contraction and expansion so that the flow of blood through arteriovenous anastomoses can be regulated according to body needs.

(Continued on page 218)

Committee
REPORTS

Defective Hearing in Children

Part VI—Conclusions

C. W. ARMSTRONG, M.D., *Salina*, Editor

GENERALLY SPEAKING THERE are three basic conditions which are productive of defective hearing. These are: 1. *diseases of the external ear,* 2. *diseases of the middle ear and eustachian tube,* and 3. *diseases involving the inner ear and the central nervous system.*

There are within these groups diseases which can be handled by the physician without the aid of an audiometer, but they were managed more intelligently with such an aid.

Audiometer

An audiometer has been defined as a precision instrument with a human being on each end. It therefore follows that the audiometer can not be used as the sole means of diagnosis of causes of defective hearing. While there are several known patterns of audiograms, it is well known that the same disease does not always produce the same audiometric curve in all persons. It may be stated then that the audiometer helps to estimate the severity of the hearing defect, to assist in the diagnosis and prognosis, and can be a definite factor in estimating the progress of any given case.

A patient may have a moderate to severe hearing defect of one or both ears due to obstruction of the external auditory canal. Such obstructions may be foreign bodies, epithelial debris, cerumen, purulent secretions, tumors, stenosis of the canal, and absence of the external ear or canal. The physician may be expected to remove all accessible obstructions and produce an improvement in the condition of the external canal and the hearing. The exceptions are those purulent processes which refuse to clear up under a reasonable period of treatment, tumors, stenoses, and the absence of the external canal. These conditions are quite properly within the province of the otologist.

A series of six articles on Defective Hearing in Children has been printed in the *Journal*. These articles were prepared by C. W. Armstrong, M.D., Salina, Kansas, for the Committee on Conservation of Hearing and Speech. The committee members are V. R. Moorman, chairman, C. W. Armstrong, J. A. Budetti, R. A. Draemel, E. L. Gann, C. L. Gray, W. P. McKnight, E. E. Miller, Ruth Montgomery-Short, W. D. Pitman, R. R. Preston, G. O. Proud, R. E. Riederer, and M. J. Ryan.

Middle Ear Conditions

Of the middle ear conditions which produce defective hearing, serous otitis media and acute purulent otitis media may be treated by the physician with a reasonable expectation of improvement. Serous otitis media is treated by the removal of the fluid from the middle ear. This may at times be accomplished by the use of vasoconstrictors and at other times by eustachian tube inflation or myringotomy.

This is the final article of a series of six prepared by the Committee on Conservation of Hearing and Speech. These articles have appeared in the JOURNAL beginning with the November 1959 issue.

Acute suppurative otitis media is generally treated by the use of antibiotics and whatever manipulation is necessary to remove residual secretions from the middle ear. Of all the ear diseases treated by antiobiotics and observed by audiometry this last condition is most satisfactory.

It will probably be asked why is chronic otitis media not included in the conditions which the general physician may be required to treat. Far too often, these are associated with chronic mastoiditis with or without bone necrosis, polyp formation, cholesteatoma, and other conditions none of which lend themselves readily to the usual treatment with antibiotics and nose and ear medication locally.

The common cold and its associated secondary infections probably produce more cases of eustachian obstruction than any other condition. Inflammation of the nasopharynx due to whatever cause results in swelling of the tissues throughout the nasopharynx and also of the tissue in the orifice of the eustachian tube. Obviously, the choice of treatment for this condition is local and general medication designed to rid the tissues of infection in this area. Failure to follow this line of attack may well result in an ascent of the infection up the eustachian tube to the middle ear. Nose blowing should be kept at a minimum, antibiotics employed in a manner consistent with the clinical behavior of the infection involved, and vasoconstrictors prescribed where indicated. As soon as the acute inflammatory phase of the nasopharynx has subsided the eustachian tube should spontaneously open and hearing return. If this should fail, air may be forced up the eustachian tube into the middle ear to restore the patency of the tube. It is quite often necessary to perform repeated inflations to accomplish this. If intelligent gentle efforts to restore the hearing result in failure, the case should be referred to an otologist. The physician has done all that could be expected of him and further responsibility should not be thrust upon his shoulders.

Eustachian Tube

Another condition involving the eustachian tube which is commonly a cause of defective hearing, is chronic infection of the adenoids and tonsils. In many instances, hearing will be restored by an adequate surgical removal of the adenoids and tonsils. Improvement in hearing is usually apparent in two to four weeks following surgery.

There will be other cases in which a further investigation by the physician will be necessary in an attempt to trace the origin of the hearing defect. These include allergies, sinusitis, anemias, chronic chest and nasal infection, otosclerosis, and general metabolic conditions. It must be recognized that although many cases will respond to "speed methods" of handling, there will be no substitute for a careful history of the patient's condition. This should include a search for the effects of such diseases as measles, mumps, family history of deafness, and a history of recurring ear infections. Inquiries into the general health of the patient with regard to chronic diseases, general nutrition, and overall stamina are necessary. A further inquiry should be made into the mental health of the patient since there are conditions which will arise occasionally in which a neurosis plays a part in the final diagnosis.

Summary

A brief outline has been made of the uses of an audiometer and its clinical application to diseases which are well within the capacity of the physician who has no immediate assistance in handling cases of defective hearing which may come to his office and require reasonably immediate attention.

715 United Building
Salina, Kansas

Trochlear Nuclei

(Continued from page 203)

subarachnoid pressure gradient in cerebrospinal fluid and on the tissue fluid pressure in muscles in the periphery.

Although Abel concluded that solutions cannot be moved through narrow tissue spaces because the tissue pressure of muscles is not great enough to overcome the pressure in the cerebrospinal fluid, other authors disagree with him. Wright states that an adequate pressure gradient is built up several times a minute in muscles in mild exercise. Moore injected colored efocaine into a peripheral nerve. The material was observed to remain in the epineurium and to enter the parenchyma of the spinal cord directly.

Thus, there are some indications that the tissue spaces of the peripheral nerves may be continuous with the tissue spaces of the central nervous system. An accurate concept of the morphologic relationship of the tissue spaces of the peripheral nerves to those in the central nervous system must await further study.

Department of Anatomy
University of Kansas
Lawrence, Kansas

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Maternal Mortality

The patient who died in a moderate sized hospital following delivery of a normal six pound, 14 ounce infant. Death was attributed to "postpartum hemorrhage due to uterine inertia."

Prenatal care was adequate and the only undesirable feature was a total weight gain of 38 pounds. Labor developed spontaneously at term and progress was satisfactory under pudendal block and light ether anesthesia. Pitocin, one ampule, and ergotrate, grains 1/320, were administered intramuscularly immediately after delivery. Crede expression of the placenta was not successful until 12 minutes after delivery and then required vigorous effort. The physician recognized immediately that there was an inversion of the uterus. Although some difficulty was encountered, he felt that he was successful in replacing the uterus inasmuch as the fundus was well above the symphysis, and bleeding, which had approximated 500 cc., diminished. Thirty-five minutes after delivery, the patient was returned to her room with a pulse rate of 124 and blood pressure of 90/60 (as compared with 140/70 before delivery).

Believing the patient to be stabilized, the physician left the hospital but was called back in ten minutes because the patient was in profound shock. Blood loss at this time was estimated at 1,000 cc. Ergotrate and Pitocin were repeated and five per cent dextrose in water containing Levophed was started by cut down. The cervix was inspected and no lacerations found. The uterus was packed. It was noted that the blood clotted normally after expulsion. Transfusion of 500 cc. of whole blood was administered about one hour after the second episode. The patient did not respond and died about three hours later.

Committee Opinion

The committee noted three features, the combination of which accounted for the outcome of this case.

First, the degree of shock was apparently underestimated. Although there was clinical evidence of control of bleeding, inversion of a hollow viscus can produce severe shock and the persistence of a rapid pulse and a relative hypotension should have been accorded greater respect.

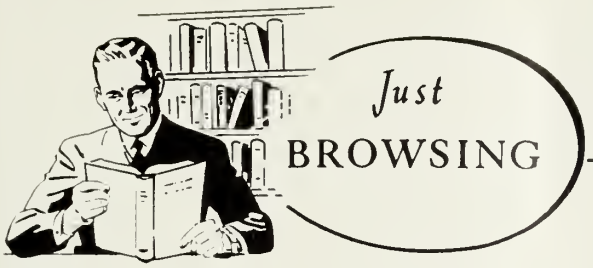
Second, the delay in administering blood undoubtedly contributed significantly. As an emergency expedient, the dextrose-Levophed solution was satisfactory but the blood should have been given more quickly.

Third, there seems to have been no urgency about delivering the placenta but had there been, manual removal from below would be preferable to a traumatic Crede maneuver.

Classification

Maternal death, direct obstetric, avoidable.

One of a series of case reports prepared by the Committee on Material Welfare to illustrate the type of study made in each instance of maternal death in Kansas.



Today, with intestinal antiseptics for pre-operative preparation, one-stage resection of the colon is carried out as the usual procedure, and with the expectation that recovery will be uneventful. Sixty years ago, however, the situation was far different, and the high risk of intestional resection at that time was the thing which led Johann von Mikulicz-Radecki to develop the type of two-stage operation which came to be known as the "Mikulicz Resection," and which made colon surgery reasonably safe. That it is rarely necessary to do operations of this type today detracts not at all from his accomplishment. Perhaps a few quotations from his article, published in 1903, will serve to let us see the situation as he did.

"As far as I am acquainted with the literature the single stage resection of the carcinomatous gut with primary suture is still today most generally in vogue. Up to now the results of this operation are far from satisfactory, even for carcinoma in the region of the large bowel alone, regardless of whether the union of gut is brought about by the old method of circular intestinal suture or through lateral implantation or apposition or finally with the intestinal button. . . . The mortality amounts to 38.4 per cent . . . collapse [or] peritonitis was the cause of death. Also interesting is the fact that in cases treated without drainage of the peritoneal cavity, the mortality was one-third higher than that of the drained cases. The cases of death from collapse indicate that the operation was too severe for a considerable portion of the patients . . . cases of peritonitis indicate that, in more than half of the fatal cases either the peritoneum was infected during the operation or peritonitis subsequently developed because of defect of the sutures. . . .

"There is no doubt therefore that we can produce an improvement in the results only if we: (1) Make the operation less severe and so lessen the danger of collapse, and (2) Prevent peritoneal infection during the operation and during the course of healing. By means of the two stage operation we accomplish both. . . .

"The advantages of this procedure are evident. The main operation is shorter than by the single stage method, the peritoneal infection during the operation is absolutely avoided, and one can thus attempt it much earlier on a patient debilitated by the disease. A further advantage is that the operation can be performed in cases of wide extension of the tumor or in deep locations, as for example in the lower part of the sigmoid flexure, where it would be too dangerous to unite the intestine because of too forceful tension on the loops of gut. The method is not only less dangerous but also more easily performed. Of course the procedure also has its drawbacks. The duration of treatment is longer and the patient operated on must bear with the unpleasantness of an artificial anus for a long time. But I think these disadvantages are greatly outweighed by the advantages of greater safety and increased ease of performance."

His method of operation for these intestinal carcinomas made it possible to resect not only the intestine itself, but also the regional lymph nodes which might be involved in metastases —a feature not present in some of the earlier types of two-stage procedures. Although the Mikulicz resection is not used now except in a limited number of poor risk cases, it provided the means of extending safe surgical treatment to a large number of patients suffering from carcinoma of the colon, and is a good example of a carefully planned attack organized to eliminate dangers before they appear, and so to safeguard the patient.—*O. R. C.*

America's Dual System of Higher Education —As Corny as Kansas in August

About the time the 150 year history of the Santa Fe Trail came to a close, and in the era of the disappearance of the great buffalo herds, Kansas participated in the wave of cultural enthusiasm marked by the establishment of schools and colleges by pioneer leaders.

As Willa Cather vividly shows in her OH, PIONEERS, the early period of western settlement had no educational centers. Later came the one-room schoolhouse, then the private academy—eventually the local college and the state university. The Northwest Ordinance of 1787 provided for educational institutions of higher learning, but bloody Kansas was so absorbed with border warfare that it was not until 1858 that John Baldwin brought a steam sawmill over the trail to Palmyra and established an academy in the town which later bore his name. Shortly before this time, early Methodist settlers in Kansas met at Kibbee Cabin north of Baldwin and determined to establish a Methodist institution named for the first Methodist bishop in Kansas, Osmon C. Baker. The Baptists opened missionary work for the Indians in Ottawa in 1837. The Morrill Act was passed in 1862, and the University of Kansas was founded in 1865.

In the early days the school and the church were symbols of the culture of the treeless prairie. Bluemont College became Kansas State University at Manhattan, and Fairmount College became the University of Wichita. The Congregationalists founded Washburn, which is now municipal, and the Catholics established schools at St. Benedict's and Mount Saint Scholastica in Atchinson. Many other groups coming across the prairie brought their cultural influences with them. Bethel is an outgrowth of the Mennonite movement, Bethany is Swedish Lutheran in origin.

Today's challenge: "Can the church-related college of liberal arts and sciences survive?" is vital to the nature of our society in a nuclear and technological era. And even more pressing is, "Should it?"

Education and religion are both products of the church. Can a society preserve its sense of direction without the church, the school, and an effective relationship between them? Several years ago Victor Hieser showed what happens to a national culture (Germany) which abandons its educational and religious ties and turns over direction to the state. State socialism is the result. Sinclair Lewis' book, *It Can't Happen Here* may overstate the case for America, but the latent threat to our republic cannot be forgotten. It was John Wesley who suggested that knowledge and vital piety belong together. This the denominations determine to do through the program of church-related colleges.

In Kansas, the total capital investment of 19 independent church-related colleges now amounts to 80 million dollars (replacement value). These institutions train 8,000 students a year without a dollar's expense to the taxpayer (tax exemption, however, is a form of support). They do this through budgets totaling approximately 8 million dollars a year. In the light of the new educational survey of Kansas, about to be released through a special legislative commission headed by Dr. Robert J. Keller of the University of Minnesota, the total impact of this movement in higher education will receive renewed attention. The churches have pioneered in education. The importance of character and spiritual training are still needed in Kansas today.

In a technological era, can America's cultural purpose and direction neglect the liberal arts and the concern with man's higher esthetic and moral nature? Music, drama, poetry, the graphic arts, and sculpture

may have been changed to accord with the present day, but without liberal arts the source of inspiration may itself be lost. "Where is the muse to be found?" may well cause America to re-evaluate the direction of education and culture as a whole. In his recent book, Jacques Barzun raises the issue of the purpose of intellect under the title of *The House of the Intellect*. To reappraise the use which America makes of its brainpower may well cause us to think deeply about national purposes. Can America gain the whole world and lose its own soul? "What doth it profit a man if he will gain the whole world and lose his own soul?" Man as a human person has individual worth. In the welter of technological materialism he needs to discover the depth and height of his personal existence and rise above materialism.

American business and industry is becoming aware of the need of a climate in which the individual choice may be preserved. The historic origins of the economic and social system in which our republic has developed have caused many leaders to renew their support for the independent church-related college. By keeping alive the will to be free, America may lay the foundation for a renaissance in cultural and moral idealism.

William J. Scarborough, Pres., *Kansas Council for Church-Related Colleges*
President, Baker University
Baldwin, Kansas

Doctor Murphy Leaves Kansas

Franklin D. Murphy, M.D., resigned as chancellor of the University of Kansas to become chancellor of the University of California at Los Angeles. Doctor Murphy's move marks the conclusion of an exciting era for this Society and for the state.

It is the story of a brilliant and dedicated young doctor who inspired physicians and a great many other persons through his idealism to accomplish goals that, except for him, appeared insurmountable. The era saw the school of medicine develop into its present magnificent stature. It gave birth and subsequent maturity to the Kansas Plan for providing physicians in rural areas. Through the proof of accomplishment, it developed in the popular mind a realistic concept for the worth of education and in the cost of its attainment.

Tragic in its true classic implication is the occasional human frailty of shortened vision where nothing less than the impact of loss can bring realization of its value. Should this occur in Kansas the sacrifice might bring a future benefit. If so, that will be the good this state can hope to acquire from the move.

Not so for Doctor Murphy. He enters a new adventure and will accomplish in a more friendly atmosphere what he heroically attempted in this state. The Kansas Medical Society is sorry to lose him as a member but every doctor joins to wish him success and happiness in his new responsibility and extends its welcome for any time he may return to his Society.

The House of Delegates

Should everything proceed as in past years, Society policy will be established during the 101st Annual Session committing the members of this Society to programs and 35 county medical societies will have had no voice in the decisions. There are 68 component societies representing 105 counties of Kansas and more likely than not, less than one-half will be represented during meetings of the House of Delegates.

The Kansas Medical Society is a most truly democratic organization but, like all democracies, may function only to the extent that its members participate. The president, elected for a one-year term, is the head of the Society. Employees and committees are directly responsible to him. He reports to the Executive Committee which meets at approximately 60-day intervals. The Executive Committee reports to the Council, which meets three or four times a year, as may be necessary. The Council is comparable to the Senate. In the Society there are 17 districts. The component societies of each district elect their own councilor. The Council establishes Society policy but may determine such course only to the date of the next meeting of the House of Delegates.

The House of Delegates is like the House of Representatives in that numerical representation applies. Each of the 68 component societies selects at least one delegate. Additional delegates are given at a ratio of one for each 20 members or major fraction thereof. A society with 30 members has two delegates. A society with 50 members has three.

Beginning at 7:30 a.m. on Monday, May 2 in Hutchinson, the House of Delegates will meet. Between 30 and 50 resolutions will be introduced. Some will come from committees, others from individual delegates speaking for themselves or for the society they represent. On Tuesday, May 3, a Reference Committee will consider each resolution separately. All members of the Society, whether delegates or not, are welcome to discuss any resolutions before the Reference Committee. On Wednesday, May 4, beginning with a luncheon, the second session of the House of Delegates convenes. At this time each resolution will be discussed and acted upon. At this time Society policy is established and whatever the

House of Delegates decides represents a commitment to each component society and to the individual member.

Members of the House of Delegates are of course all physicians. The Society understandably has confidence in them. There is a minimum of fractional opinion, but the analogy of the Federal Government with the Kansas Medical Society in illustrating how a democracy operates is striking. In the Society, there is a unanimity of interest which does not always appear in government. But the end-result is similar.

Democracy succeeds only to the extent that the individual participates, whether that applies to the nation or to the Medical Society. It could well be that Society policy would be exactly as it is today even if each component organization had been represented. The truth is, however, that one-half the societies in this state permit themselves to be governed without representation. The officers of the Kansas Medical Society are most hopeful that the situation will be reversed this year and that the democratic principles upon which this Society operates can be placed into action. Such may easily occur but only if each component society sends its full complement of delegates to this Annual Session.

Among the resolutions will be problems relating to new projects which may require expenditure of funds. If adopted, an increase in dues will be required. This will affect each member and should not be determined without the full understanding of his Society's representation. Resolutions will be introduced to revise the Relative Value Scale, which too can have far reaching implications upon the practice of medicine. These are but examples of many actions that may be taken at this meeting.

If the entire governing body is present, Society policy will then and only then reflect the wish of the complete Society. Anything short of this will necessarily, by that degree, fall short of fulfilling the obligation and the opportunity afforded the government of this Society according to democratic principle.

Tumor Conference

(Continued from page 211)

Dr. Robinson: What is the most commonly accepted name for these tumors?

Dr. Mantz: The names carotid body tumor, chemodectoma, and non-chromaffin paraganglioma are used interchangeably. Chemodectoma is becoming a more popular name,[5] and it is the one used by the Armed Forces Institute of Pathology.

Dr. Robinson: Although this is a vascular tumor it apparently does not respond to irradiation.[3, 4, 6]

Dr. Tice: I have had very little radiographic experience with these tumors. One case I remember was operated on two times for an invasive glomus tumor that was very painful. The pain was finally relieved by x-irradiation. Certainly in all cases surgery should be the primary treatment.

Dr. Mantz: This carotid body tumor is often referred to as the "potato tumor" because of its consistency. It has a classical clinical characteristic; it can be moved easily from side to side, but never up and down, because of its fixation to the bifurcation of the carotid artery.

Dr. Robinson: In summary, the carotid body tumor or chemodectoma has been discussed in regard to differential diagnosis, typical pathology and specific therapy. The tumor is dangerous because of its local growth and eventual compression and occlusion of the carotid arterial circulation to the brain. The risk of operation, once of considerable magnitude, has been lessened by newer surgical techniques. With early detection and adequate surgery, complete cure can be obtained.

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It is folly in one nation to look for disinterested favors from another . . . it must pay with a portion of its independence for whatever it may accept . . . by such acceptance, it may place itself in the condition of having given equivalents for nominal favors, and yet of being reproached with ingratitude for not giving more. There can be no greater error than to expect or calculate upon real favors from nation to nation. It is an illusion which experience must cure, which a just pride ought to discard.

—*George Washington*

Each honest calling, each walk of life, has its own elite, its own aristocracy based on excellence of performance. . . . There will always be the false snobbery which tries to place one vocation above another. You will become a member of the aristocracy in the American sense only if your accomplishments and intergrity earn this appellation.

—*James B. Conant*

From the Stacks

Soviet Medical Literature

Attention is often called these days to the extent and high quality of Soviet scientific work and to the fact that, because of the language barrier, American scientists are in the dark about what the Russians are doing. There is no question here of iron curtain restrictions on information. The Soviets support an enormous and open program in scientific publication. Most of their hundreds of journals are available readily and cheaply to any western institution or individual who cares to subscribe to them. Russian libraries are encouraged to engage in exchanges of material with western libraries. In fact, when an American library representative goes to Russia to acquire printed material on the book market he finds taxes in effect which are designed to make it more advantageous for him to work through a Russian library and to pay for his books with Western books rather than with cash.

Some Years Before Our Scientists Can Read Russian

At best it will be some years before an appreciable number of American scientists can learn to read Russian but in the meantime a great deal is being done to provide English translations of the most important Soviet work. This line has been vigorously pursued in the medical sciences and a surprising amount of translated literature is available.

The Russian Scientific Translation Program undertaken by the National Institutes of Health is concentrated primarily on the republication in English of the entire content of major basic medical science journals. The list at present includes: *Biochemistry*, the *Bulletin of Experimental Biology and Medicine*, *Biophysics*, the *Journal of Microbiology, Epidemiology and Immunobiology*, *Problems of Oncology*, *Problems of Virology*, the *Sechenov Physiological Journal of the USSR*, *Problems of Hematology and Blood Transfusion*, and the *Pavlov Journal of Higher Nervous Activity*. All of these are indexed in the new *Index Medicus* and its predecessor the *Current List of Medical Literature* and all may be borrowed from the Clendening Medical Library at the University of Kansas Medical Center. Under a grant of the National Institutes of Health some or all of these translated journals are also being received by a number of other libraries in Kansas including those of the Hertzler Research Foundation, the Menninger Clinic and the Sedgwick County Medical Society. These journals included in 1959 about 2,000 scientific papers and ran to 9,500 pages, a great amount of translated literature.

Russian Monographs Translated

The National Institutes of Health have also engaged in the translation of important Russian monographs, copies of which are deposited in major libraries. Editors of American medical journals may have specific Russian articles translated for re-publication in their journals. The quarterly *Abstracts of Soviet Medicine* published by the Excerpta Medica Foundation under a grant from the U. S. Public Health Service covers a choice part of the clinical as well as the basic science work.

It is generally agreed that the quality of the Russian's basic research is higher than that of their clinical work, which is perhaps not surprising in a country where the individual is relatively unimportant.

A few periodicals not available in translation are bought in the original Russian editions by the Clendening Library. The University of Kansas Library is engaged in an active Slavic acquisitions program and has deposited at the Medical School the twelve volumes so far published of the *Bol'shaia Meditsinskaia Entsiklopediia*, the "Great Medical Encyclopaedia" which will extend to 35 volumes replete with color plates, sound recordings and stereoscopic slides. Whatever its practical value may be here it has an admonishing effect when one considers that it can be made available to us in Kansas at less than three dollars a volume whereas the comparable production of an American press could hardly be sold for five times that amount.

Chinese Works to Come

Farsighted alarmists say that within 20 years we shall have a still greater problem in scientific literature forced upon us by the emergence of important Chinese work. For the present, we have a long way to go before we can say that the Soviet literature is being properly assimilated but a good deal is being done to pave the way.—G. S. T. Cavanaugh, Librarian, Clendening Medical Library, University of Kansas Medical Center.

It is easier to be a lover than a husband, for the same reason that it is more difficult to show a ready wit all day long than to say a good thing occasionally.

—*Honoré de Balzac*

The President's Message

DEAR DOCTOR:

Over the past several months of my term of office the preparation of this page has been a task approached with reluctance and some times without inspiration. I have been grateful for those of you who have signified that my scribblings had been read. A few have even taken umbrage at some of my remarks and that is all to the good.

As I face these pages, knowing that this is my final written word in the JOURNAL during my presidency, I find no lack of things to write about. My feeling is more intense about those things which I may not, and should have, said. My thoughts turn to the many opportunities which I may have missed to bring home to the medical profession the necessity of its continued interest in organized medicine.

My thoughts and gratitudes go to my colleagues who have made this year possible for me; to the officials at the executive office and members of the staff who have been friendly, diligent, and untiring in my behalf, and yours; to the officers and committee members of the Society who have attended many meetings, sometimes at great inconvenience; to the Council and the House of Delegates who have been most cooperative; and to the officers and members of component societies who have been most gracious in asking me to meet with them and have given me the opportunity to report on the problems of medicine as I saw them.

No one leaving the office which I have held can leave with the feeling that he has completed a job. Too many things are left uncompleted. The functions of our Society are too complex and varied to allow easy solution to our problems. We are fortunate in that we have continuity of leadership in our executive office and among our elected officers. Please give them your support and help in the years to come as you have in the past.

With time running out, one opportunity remains. That will be the annual meeting at Hutchinson, May 2, 3, and 4. The local committee has been working hard over a period of many months to bring you interesting speakers. Let each component society designate its delegates and alternates. You are all welcome at the House of Delegates meeting to be held on May 2, and May 4, even though you are not a delegate. Attend, listen to the problems of your Society, help us in their solution. You and the Society will be benefited.

Fraternally yours,

Glenn R Peters M.D.

President

WELCOME TO HUTCHINSON

For the second time in recent years the Reno County Medical Society has the pleasure of being the host society for the annual meeting of the Kansas Medical Society. An unusual experiment in the meeting format is being tried this year in that there will be no scientific and commercial exhibits. This will allow an uncluttered meeting to be held entirely in the Baker Hotel. The meeting will stress two aspects of our medical life—the scientific program and the social program.

The scientific program will present subjects of general interest in enough depth so that problems can be covered adequately. For the program to be of value we earnestly plead for your attendance and participation. The round table discussions require your questions and participation for coverage of problems of interest.

Since the last meeting in Hutchinson the Prairie Dunes Country Club has added nine more agonizing and conscience testing holes. On all eighteen holes the rough is very rough, the fairway is fair but narrow and the greens are a small green oasis despite the number of strokes and tosses required to reach them. The gunsmokers will have their abilities tested by devious means that only a skeet shooter understands.

The first hundred years of the Kansas Medical Society ended last year, so we invite you to begin the second hundred years with us at Hutchinson, May 2-4, 1960.

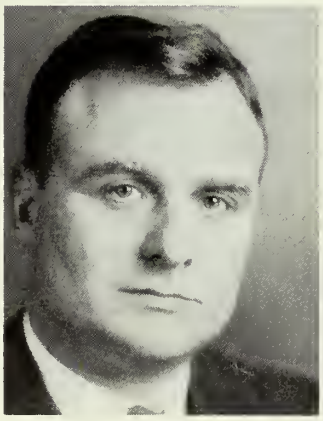
V. R. Moorman, M.D.

President Reno County Medical Society

101st Annual Session, Kansas Medical Society

Monday, May 2, through Wednesday, May 4, 1960

SCIENTIFIC SPEAKERS



JESSE E. EDWARDS, M.D.

Rochester, Minnesota

Graduate, Tufts University, School of Medicine, 1935; Consultant, Section of Pathologic Anatomy, Mayo Clinic; Professor of Pathology, Mayo Foundation, Graduate School of the University of Minnesota; Consultant, Surgeon General United States Army; Consultant, National Cancer Institute and United States Public Health Service; Member, American Heart Association, American Association of Pathologists and Bacteriologists, American Society of Clinical Pathologists; President, International Academy of Pathologists, 1955; Fellow, American College of Physicians.

Specialty: Pathology.

Clinical Pathologic Correlations in Coronary Atherosclerosis

Discussion will be presented of the clinical and pathologic features of coronary disease which portrays the wide range of manifestations among a series of patients with coronary atherosclerosis. Among the prominent features in patients with coronary atherosclerosis is the tendency for attacks of acute myocardial ischemia which may manifest itself in the form of sudden death, coronary insufficiency without myocardial infarction, or myocardial infarction.

ELIOT E. FOLTZ, M.D.

Winnetka, Illinois

Graduate, Northwestern University Medical School, 1939; Assistant Professor of Internal Medicine, Northwestern University Medical School; Member of the Faculty of Northwestern University Medical School since 1940; Attending Staff, Evanston Hospital, Evanston, Illinois; Founder, Fatigue Laboratory, 1940, Northwestern University Medical School; Fellow, *Honorary* Life Member, American College of Physicians; General Chairman of the A. C. P.'s 40th Annual Session 1959; Member, American Gastroenterological Association, American Association for the Advancement of Science; Author or co-author of numerous articles in his field.

Specialty: Internal Medicine.

Diaphragmatic Hernia

The evisceration of any part of the abdominal contents through the diaphragm into the thoracic cavity results in a diaphragmatic hernia. The various means by which this is produced will be described. For the more common and important types, the details of symptomatology, physical findings, complications, associated diseases, differential diagnosis, use of special diagnostic techniques, therapy, and prognosis will be discussed.

GEORGE LYMAN JORDAN, JR., M.D.

Houston, Texas

Graduate, University of Pennsylvania, School of Medicine, 1944; Chief in the Department of Surgery, Veterans Administration Hospital, Houston; Associate Professor of Surgery, Baylor University since 1958; Attending in the Department of Surgery, Jefferson Davis Hospital, Houston; Certified by the American Board of Surgery and the American Board of Thoracic Surgery; Member, Southern Society for Clinical Research; Society of University Surgeons; New York Academy of Sciences; American Heart Association; Society for Experimental Biology and Medicine; American Society for Experimental Pathology.

Specialty: Thoracic Surgery.

The Present Status of Vascular Surgery

In recent years evidence has accumulated to indicate that segmental occlusive or aneurysmal lesions amenable to surgical therapy may be present in branches of the aortic arch, the carotid arteries, the superior mesenteric artery, the renal arteries, and the femoral arteries, as well as in the aorta. The basic surgical approaches to treatment of these lesions will be discussed and the results of surgery evaluated in the light of current experience.

JOHN W. KIRKLIN, M.D.

Rochester, Minnesota

Graduate, Harvard University Medical School, 1942; Associate Professor of Surgery, Mayo Foundation Graduate School, University of Minnesota; Surgeon, Mayo Clinic and associated hospitals, Rochester; Assistant Resident in Surgery, Children's Hospital, Boston, 1948-1949; Army of the United States, Captain, 1944-1946.

Specialty: Thoracic Surgery.

Open Intracardiac Surgery

The results of presently used techniques for open intracardiac surgery will be given. The risks inherent in these techniques will be presented. A report of what can be accomplished will be given in the form of details of operations for certain specific congenital and acquired lesions with a discussion of their indications and results.

JULIUS R. KREVANS, M.D.

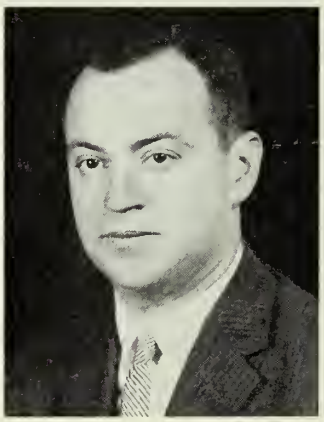
Baltimore, Maryland

Graduate, New York University, College of Medicine, 1946; Assistant Professor of Medicine, Johns Hopkins Hospital since 1955; Visiting Physician and Hematologist, Baltimore City Hospitals; Member, Sub-Committee on Transfusion, National Research Council; Member of American Federation of Clinical Research and the American Association of Blood Banks; Captain in the United States Army Medical Corps, 1950; Contributing Editor, *VOX ASNGUINIS*, January 1960.

Specialty: Internal Medicine.

The Use and Abuse of Hematinics

Anemia is not a disease. The proper treatment of anemia depends upon an accurate diagnosis of the cause. The use of "shotgun" preparations is not only intellectually inadvisable but in certain situations may represent a hazard to the patient.



THEODORE C. PANOS, M.D.

Little Rock, Arkansas

Graduate, State University of Iowa, College of Medicine, 1942; Professor of Pediatrics and Chairman, University of Arkansas; National Consultant in Pediatrics, United States Air Force; Associate Professor, Pediatrics, University of Texas Medical Branch, 1953-1958; Member, American Academy of Pediatrics, Society for Pediatric Research, Endocrine Society, American Institute of Nutrition, Society for Experimental Pathology, Society for Experimental Biology and Medicine; *Sigma Xi.*

Specialty: Pediatrics.

Nutritional Requirements of the Neonate

The specialized nutritional requirements of the newborn in adapting to postnatal existence are summarized. Ideal programs of feeding are outlined and various deficiency syndromes discussed.

WILLIAM G. SAUER, M.D.

Rochester, Minnesota

Graduate, University of Cincinnati College of Medicine, 1940; Consultant in Internal Medicine, Mayo Clinic; Diplomate, American Board of Internal Medicine, 1947; Diplomate, Subspecialty Board of Gastroenterology, 1955; Fellow, American College of Physicians; Active Member, American Gastroenterologic Association; Member, Minnesota Society of Internal Medicine; Assistant Professor, Mayo Foundation, Graduate School of the University of Minnesota.

Specialty: Internal Medicine.

Clinical Observations on Withdrawal of ACTH and Steroid Therapy from Patients with Ulcerative Colitis

A study is presented of the effects, beneficial and otherwise, of withdrawal of adrenal steroid and ACTH medication from a selected group of patients with ulcerative colitis.

Host for the Meeting

Hutchinson Physicians Arranging the 1960 Session

GENERAL CHAIRMAN—JACK L. PERKINS, M.D.

ADVISORY AND PROGRAM COMMITTEE

Calvin R. Openshaw, M.D., Chairman
David Lukens, M.D.
Robert N. Sheers, M.D.

ARRANGEMENTS AND ENTERTAINMENT

Victor R. Moorman, M.D., Chairman

ADVERTISING AND PUBLICITY

Jack C. Schroll, M.D., Chairman

RECEPTION AND REGISTRATION

Members of the Reno County Medical Society

SPORTS EVENTS

Robert A. Crawford, M.D., Chairman

AUXILIARY

Leland S. Glaser, M.D., Chairman

Program for Monday, May 2, 1960

General Sessions—Baker Hotel, Hutchinson, Kansas

7:30 House of Delegates Breakfast and Meeting
Town Club, 110 North Poplar

9:00 Opening of Registration Desk

FIRST GENERAL SESSION

V. R. Moorman, M.D., *presiding*

10:00 NUTRITIONAL REQUIREMENTS OF THE NEONATE

Theodore C. Panos, M.D., Little Rock

10:50 OPEN INTRACARDIAC SURGERY

J. W. Kirklin, M.D., Rochester

11:40 PANEL—CONGENITAL HEART DISEASE

C. R. Openshaw, M.D., Hutchinson, *moderator*
Jesse E. Edwards, M.D., Rochester
J. W. Kirklin, M.D., Rochester
Theodore C. Panos, M.D., Little Rock

12:30 LUNCHEON BREAK

1:30 KANSAS MEDICAL GOLF AND SKEET SHOOTING ASSOCIATION

Golf—Prairie Dunes Country Club
Trap—Ark Valley Rod and Gun Club

7:00 SPORTS AND AWARDS DINNER
Prairie Dunes Country Club

EMERGENCY TELEPHONE NUMBER ..... BAKER HOTEL MO5-5521

Program for Tuesday, May 3, 1960

Baker Hotel, Hutchinson, Kansas

8:30 Opening of Registration Desk

SECOND GENERAL SESSION

John N. Blank, M.D., *presiding*

9:00 Clinical Pathologic Correlations in Coronary Atherosclerosis

Jesse E. Edwards, M.D., Rochester

9:50 Diaphragmatic Hernia

Eliot E. Foltz, M.D., Winnetka

10:40 Panel—Clinical Management of Peptic Ulcers

David Lukens, M.D., Hutchinson, *moderator*

Eliot E. Foltz, M.D., Winnetka

George L. Jordan, Jr., M.D., Houston

William G. Sauer, M.D., Rochester

11:30 Luncheon Break

SPECIALTY GROUPS

Chest Physicians

EENT Specialists

Obstetricians and Pediatricians

Pathologists

Radiologists

7:30 Kansas Medical Society Annual Banquet and Dance

Baker Hotel, Grand Ballroom

EMERGENCY TELEPHONE NUMBER ..... BAKER HOTEL MO5-5521

Specialty Group Meetings

Tuesday, May 3, 1960, Baker Hotel, Hutchinson, Kansas

FOR CHEST PHYSICIANS

The Kansas Chapter of the American College of Chest Physicians

John K. Fulton, M.D., Wichita, President

1:30 Selective Pulmonary High Carcinolytic Agent Concentration in the Treatment of Bronchogenic Carcinoma
Alfred M. Tocker, M.D., Wichita

2:00 Anomalous Pulmonary Veins
C. Frederick Kittle, M.D., Kansas City

2:30 Clinical Caprices of Cardiac Surgery
R. Lawrence Sifford, M.D., Wichita

3:00 The Use of Serologic Tests in the Diagnosis of Histoplasmosis
Charles E. Andrews, M.D., Kansas City

3:30 Allergic Pneumonitis
Charles Pokorny, M.D., Halstead

4:00 Diagnostic Problems and Interesting Cases of Surgical Variety
Robert M. Brooker, M.D., Topeka, and
John G. Shellito, M.D., Wichita

A short discussion is encouraged following each presentation

A Reception and Dinner will follow the scientific session

The evening speaker will be **William J. Gillespie, M.D.**, St. Louis

FOR E.E.N.T. SPECIALISTS

Eye, Ear, Nose, and Throat Section, Kansas Medical Society

James E. Bresette, M.D., Kansas City, President

12:30 Business Meeting

FOR OBSTRICIANS & PEDIATRICIANS

Kansas Obstetrical Society

Robert Sohberg, Jr., M.D., McPherson, President

Kansas Pediatrics Society

Thomas C. Hurst, M.D., Wichita, President

11:00 Clinical Observations of Infections in the Newborn
Ned Small, M.D., Prairie Village

11:45 An Obstetrician's Viewpoint on Perinatal Mortality
Kermit Krantz, M.D., Kansas City

12:30 Luncheon Question and Answer Session

2:00 Problems of Current Interest in Perinatal Mortality
Edith Potter, M.D., Chicago

3:00 Panel Discussion
Russell Nelson, M.D., *moderator*
Kermit Krantz, M.D.
Edith Potter, M.D.
Ned Small, M.D.

4:00 Reception

FOR PATHOLOGISTS

Kansas Society of Pathologists

Leo P. Cawley, M.D., Wichita, President

1:00 Business Meeting

2:00 Joint Meeting with Kansas Society of Medical Technologists

FOR RADIOLOGISTS

Kansas Radiological Society

James R. Stark, M.D., Wichita, President

12:30 Business Meeting

EMERGENCY TELEPHONE NUMBER ..... BAKER HOTEL MO5-5521

Program for Tuesday Evening, May 3, 1960

Baker Hotel, Grand Ballroom, Hutchinson, Kansas

6:30 Reception and Social Hour, *Town Club*

6:30 University of Kansas Medical School Alumni Reception, *Baker Hotel*

7:30 Annual Banquet, Kansas Medical Society

Introduction of Guests

Oath of Office Incoming President

Program:

THE SPIRIT OF KANSAS

A Chronicle of the History of Kansas From Territorial Days to Its Centennial Year—1961, in Song and Recitation.

Presented by *The Spirit of Kansas Group,* Wichita

Moderator: Jack Laffer

Dancing to the music of the **Norman Lee Orchestra**

Program for Wednesday, May 4, 1960

Baker Hotel, Hutchinson, Kansas

8:30 Opening of Registration Desk

THIRD GENERAL SESSION

J. L. Perkins, M.D., *presiding*

9:00 Use and Abuse of Hematinics

Julius R. Krevans, M.D., Baltimore

9:50 Clinical Observations on Withdrawal of ACTH and Steroid Therapy from Patients with Ulcerative Colitis
William G. Sauer, M.D., Rochester

10:40 Present Status of Vascular Surgery
George L. Jordan, Jr., M.D., Houston

11:30 House of Delegates Luncheon and Meeting

4:00 Meeting of the Council

EMERGENCY TELEPHONE NUMBER . . . . . BAKER HOTEL MO5-5521

Kansas Society of Medical Technologists

13th Annual Meeting, May 3 and 4, 1960
Baker Hotel, Hutchinson, Kansas

Tuesday, May 3

Blood Coagulation

Mrs. Jane Lenahan, Warner-Lambert Research Laboratories

Prothrombin Time and Related Tests

Mrs. Jane Lenahan

Luncheon for Board Members

Lecture

Mrs. Ruth Drummond, Registrar of the American Society of Clinical Pathologists

Pediatric Laboratory Medicine

R. N. Shears, M.D., Hutchinson, Pediatrician

Social Hour and Banquet

Wednesday, May 4

Liver Function Tests

Hans Lettner, M.D., Hutchinson, Pathologist St. Elizabeth's and Grace Hospitals

Business Meeting

Lecture

Julius Krevans, M.D., Baltimore, Hematologist from Johns Hopkins University

The Heart and Its Related Laboratory Tests

David Lukens, M.D., Hutchinson, Internist

Kansas Medical Assistants' Society

20th Annual Meeting, April 30, May 1 and 2, 1960
Baker Hotel, Hutchinson, Kansas

Saturday Evening, April 30

8:00-11:00 Open House

Sunday, May 1

9:00 Registration and Coffee
Mezzanine, Baker Hotel

9:00 Executive Board Meeting

12:00 President's Luncheon

1:15 Call to Order
Mrs. Ruth Sieverling, Wichita, President, Kansas Medical Assistants' Society

1:20 Address of Welcome
V. R. Moorman, M.D., Hutchinson, President, Reno County Medical Society

1:30 Response
Glenn R. Peters, M.D., Kansas City President, Kansas Medical Society

1:45 Business Session and Election of Officers

3:00 Anesthesia Through the Centuries
Paul Stoesz, M.D., Hutchinson

4:00 Travels in Egypt
John B. Jarrott, M.D., Hutchinson

6:00 Banquet and Entertainment

Monday, May 2

9:00 Registration
Mezzanine, Baker Hotel

9:30 Call to Order and Announcements
Mrs. Ruth Sieverling, Wichita

9:40 Greetings
Mrs. Dorothy Balding, Hutchinson, President, Reno County Medical Assistants

10:00 Germany and Medicine
Hans Lettner, M.D., Pathologist, Hutchinson

11:00 Panel—Credits and Collections
Mrs. Mary Jones, President, Credit Bureau, Hutchinson

12:00 Luncheon and Program
Speaker
Mr. John Neal, Exchange Student to Holland

Installation of Officers
Miss Hope Finley, Hutchinson, Immediate Past President, Kansas Medical Assistants' Society

Woman's Auxiliary to the Kansas Medical Society

May 2, 3, 4, 1960, Hutchinson, Kansas

Monday, May 2

9:00-4:00 Registration, Baker Hotel, Mezzanine
HOSPITALITY ROOM AVAILABLE, Emerald Room

9:30 Tour of the Hutchinson News, 45 minutes

11:00 Tour of the Co-Op Elevator, 30 minutes
Leave directly from News tour or from Baker Hotel at 10:15

12:00 Past State President's Luncheon, Ranch House, 25th and Main

2:00-4:00 Pre-Convention Board of Director's Meeting
First Methodist Church, First and Walnut Streets

4:30-5:30 Welcoming Tea, honoring state officers, Hospitality Room, Emerald Room, Baker Hotel

Tuesday, May 3

9:00-4:00 Registration, Baker Hotel, Mezzanine
HOSPITALITY ROOM AVAILABLE, Emerald Room

9:00-12:00 General Session, First Methodist Church

1:30 Luncheon and Style Show, Prairie Dunes Country Club

6:30 Social Hour, Town Club

7:30 Annual Banquet, Ballroom, Baker Hotel

Wednesday, May 4

9:00-12:00 Registration, Mezzanine, Baker Hotel
HOSPITALITY ROOM AVAILABLE, Emerald Room

9:15 Tour of the Carey Salt Mine, one hour
Leave Hotel by 8:45

9:00-10:30 Buffet Breakfast-Brunch (continuous service)
Town Club, 110 North Poplar

10:45 Hair Styling Program by Hutchinson Cosmetologist Association, Town Club

10:00-10:45 Post Convention Board of Director's Meeting
Town Club, North Room

President and President-Elect

Introducing the Major Officers Of the Kansas Medical Society

GLENN R. PETERS, M.D., *President*

Glenn R. Peters, M.D., was the fifth of a distinguished series of presidents of the Kansas Medical Society to come from a single office. The wisdom of the Society's selection has been abundantly demonstrated by his exceptional performance. This will be a year the physicians of Kansas shall long remember.

Among his services to the Society should be named many outstanding achievements from which only these few have been selected. Doctor Peters appeared before the Ways and Means Committee of the Congress acting both for the American Medical Association and the Kansas Medical Society to protest passage of the Forand Bill. He activated interest in Industrial Medicine and is currently succeeding in the revision of antiquated practices in Workmen's Compensation. Through his guidance as president, the Society has undertaken to aid the raising of educational standards at all levels in this state. This represents the first Society public service project outside the immediate field of health.

What the Society will remember most about this year is the inspiration Doctor Peters brought to everyone he met. The geniality of his personality, his friendliness coupled with absolute integrity and his untiring devotion to the responsibilities of his office combined to solidify the profession to the cause he championed. At the same time he gave an abiding sense of strength and humanity for medicine in the eyes of the public. The year has been all too short.

F. E. WRIGHTMAN, M.D., *President-Elect*

Each incoming president brings to his office the direction of individual talents and of especial interests. The variety so obtained during a course of years broadens the base of activities in which the Kansas Medical Society is engaged and makes the doctors of this state effective in many public service programs.

Dr. Frederick E. Wrightman will once again prove the benefits of the above statement during his presidency next year. Practicing in a relatively small community in a farm area he understands the problems of health care in rural Kansas and what needs to be accomplished toward their solution. He brings many years' experience working with professions allied to that of medicine through his service on the Kansas Interprofessional Advisory Council and has an exceptional understanding of the relationships between medicine and nursing.

The Kansas Medical Society looks forward to another memorable year under the guidance of Doctor Wrightman. His dignity and poise will bring stature to the Society wherever he appears. His sincerity and interest in the affairs of medicine will bring confidence. His understanding and the ethics of his practice will give the Society a continuation of an unending succession of high ideals in its leadership.

Councilor Reports

Activities in the Various Geographical Districts of the State

First District

This has been a rather quiet year in this district. A district wide dinner meeting was held at Denton in November. This meeting was attended by Doctor Peters, our state president, Mr. Oliver Ebel, and several past presidents and presidents elect. Approximately half the doctors in the district attended, with their wives, to make it a very worthwhile meeting.

Several smaller group and county meetings were attended by your councilor. No problems of ethics arose during the year. Most of our efforts were directed to informing members of medical legislation pending.

Emerson Yoder, M.D., *Councilor*

Second District

The Wyandotte County Medical Society was ably led by Matthew R. Fitzpatrick as President during 1959. The new decade is starting with Wray Enders as President for 1960. With leadership of this caliber the Society has had a most successful year, and few or no real problems have come to the attention of the Councilor.

Activities have included several interesting meetings of general interest to laymen as well as physicians. Our annual meeting with the local legal profession as our guests was quite successful and we were honored by the presence of our Congressman, the Honorable Newell A. George at that meeting.

Other activities have included some panel discussions before lay groups, notably two such panels have been planned by President Glenn R. Peters with two or three other physicians completing the panel. Topics of general lay interest were presented and those panels were well received. The proposed Forand bill has come up for discussion at these meetings.

Several organizations need to be mentioned and given credit for help in making this a successful year. We hesitate to start a list of this type for surely some fine group will be overlooked. We do feel that special mention should be made of the Kansas City, Kansas Y.W.C.A. for providing us with a fine place to meet on two or three occasions. We must also mention the fine cooperation of the local Board of Health, the Visiting Nurse Association, the Auxiliary to the Wyandotte County Medical Society, and the American Red Cross. We, of course, continue to appreciate the activities of the Wyandotte County Medical Assistants' Society. God love 'em! I wonder where we would be without them!

Our local Medical Society owes a great debt of gratitude to acting lay-secretary Miss Agnes Burns, and to many others.

J. Warren Manley, M.D., *Councilor*

Third District

In this district there have been no problems brought to my attention this past year, and all society business seems to be functioning smoothly.

There has been a continuing increase in the membership in the district, particularly in Johnson County for the past five years, which will probably make it rise to the top four in the state as far as size is concerned. It is hoped that this county can provide an increasing voice in state medical affairs to commensurate with its size.

This councilor has enjoyed his participation in state level medicine and hopes to serve the district well for the forthcoming year.

George R. Maser, M.D., *Councilor*

Fifth District

The component societies of the Fifth District have reported no major problems or requests for action during the past year.

The attendance of the Fifth District members at Postgraduate Circuit Courses has been observed to be good. It is anticipated that the district will be well represented at the annual meeting in 1960.

Ralph G. Ball, M.D., *Councilor*

Sixth District

In reviewing the activities of the society for 1959, I find that, contrary to the usual belief, that our membership climbs very slowly. As a matter of fact, at the end of 1959, we had 157 active members which is only seven over that of a year ago. Fellowship resulted in the loss of one member for a total of three; emeritus gained two, making twelve; associate membership dropped one, making eight and the only remarkable change was in the resident category which

increased from one to eleven. This is due to the fact that the society lowered resident dues in the hope that more would join and it appears that our hopes have been realized. Through death we lost four members, Drs. Floersch, Macrae, C. S. Smith and Murton Shaver.

Continuing their support, members again assessed themselves for $15.00 each active member for the American Medical Education Foundation. Also believing that the Science Fair is a worthwhile program for our youngsters, a $5.00 assesment for each member was voted for this purpose.

Many of the committees continue in their various activities but most notable is the Rural Health Committee which last year sponsored a program on the heart. Five or six hundred women attended this meeting and heard a panel of local physicians and a heart specialist from the University of Kansas. This same committee is presently working the Shawnee County Agricultural Extension Unit and its various subdivisions in formulating a mass tetanus immunization program. The School Health Committee, working closely with the schools and other related organizations, continued to formulate plans and policies for the betterment of the school health programs. The Tuberculosis Committee was instrumental in the continuation of a clinic for tubercular patients at one of the local hospitals. The Public Health Committee was instrumental in implementing certain policies to be followed by the State Building in regard to medical care for employees.

Continuing its public activities, the society again sponsored a delegate to Boys' State at Wichita. As hosts to the Kansas Medical Society, a great many hours were spent in the planning and preparation of annual meeting activities which included the Hall of Health which was open to the general public and especially to children. Many seemed to gain a new conception of medicine and what it represents by viewing the exhibits.

The usual number of regular scientific programs were held which included both medical and legal subjects. Also, a joint meeting was held with the Auxiliary.

Somehow, these projects now seem of minor importance but we all devoted a great deal of time and effort in making them possible.

James A. McClure, M.D., *Councilor*

Seventh District

The Seventh District composed of the counties Chase, Morris, Wabaunsee, Lyon, Osage, and Coffey and represented by seven physicians on honorary status and 36 physicians on an active status has incurred no unusual problems during the past year. The Lyon County Medical Society has been active in regard to the Forand Bill legislation. Interprofessional relations have been harmonious. There has been a good attendance at the Postgraduate Circuit Courses held in Emporia. The Lyon County Medical Society has had excellent professional programs at their meetings which have been well attended by members from the other counties in the Seventh District.

John L. Morgan, M.D., *Councilor*

Eighth District

This has been a quiet year in the Eighth District. This councilor has attended all meetings of the council and reported all business transacted to the component societies.

There was one major problem brought to the attention of this councilor, which was handled nicely at its origin.

The interest of the members of this district in postgraduate work, both at the Medical Center and circuit courses has been excellent. We have had six Osteopathic Physicians in attendance at the circuit courses in Cowley County, which speaks well for their interest in self improvement.

The Arkansas City Academy of Medicine sponsored a Hall of Health in connection with the Annual Arkahala Celebration in Arkansas City, in October, with 2,500 persons viewing the exhibits.

Public Relations during the last year have been satisfactory, and we feel that general acceptance is on a sound basis in this district. Our Interprofessional Relations have been very harmonious.

This councilor wishes to thank all members of the Eighth District for their cooperation in furthering the interests of Kansas Medicine. It has been a real pleasure to serve you.

James E. Hill, M.D., *Councilor*

Ninth District

As is true of most years, 1959 has been an uneventful year in District Nine. There have been no problems that have been called to this councilor's attention. I may say that this is my sixth and last year as councilor of District Nine and that I have enjoyed representing the district for these six years. To my knowledge I have not missed a councilor meeting and have endeavored to represent the district as well as possible.

If there is anyone in the district who has a prospective councilor to suggest please feel free to do so prior to the meeting of the Kansas Medical Society in May. To date no one has clamored for the job. It will, however, be necessary to elect a new councilor

in May and I would appreciate any names that anyone in the district might suggest.

L. S. Nelson, Jr., M.D., *Councilor*

Tenth District

This has been a quiet year in the Tenth District. I have attended all Council Meetings and hear too much about the Forand Bill. I wish to state in this report that Floyd J. Breeding is definitely not for this type of Legislation as we keep hearing from the A.M.A.

The indigent care problem only appears to grow and it is hoped in our District it will remain largely a social welfare headache.

Attendance at Circuit Courses and other Postgraduate Courses has been good. The change in format for these meetings has been well accepted.

Professional relationship within this District has always been good.

Our District hosts the State Medical Society Meeting this year. The boys in Hutchinson appear to have everything under control. We hope that everyone will be happy with the radical change in format for this Meeting.

It has been a real pleasure to be Councilor for the Great Tenth District.

John N. Blank, M.D., *Councilor*

Eleventh District

The 11th District of the Kansas Medical Society has had a very successful year. The programs presented each month by the Medical Society of Sedgwick County have been outstanding with well-known speakers appearing from many areas of the United States. The programs have been both informational and educational to our members with attendance from many of our neighboring county medical societies.

The Medical Society of Sedgwick County together with the Hospital Council of Wichita have jointly put into operation a complete disaster plan. All of the hospitals as well as the Medical Society building and the other health agencies have been equipped with radio transmitters and receivers operating in the amateur radio band of frequencies. These radio stations are tied in with the disaster network maintained by the American Red Cross in Wichita and the Civil Defense organization. Drills are held each month with all of the hospitals in contact with the Medical Society. In addition, there is adequate information maintained concerning the various disaster teams which the Society has organized. In the event of a natural or man-made disaster the Medical Society building in Wichita would be the headquarters for activities in the County. The disaster plan was given some publicity in the *A.M.A. News* recently.

The Science Fair will once again be held sponsored jointly by the Sedgwick County Medical Society and the University of Wichita. More than 200 exhibits made by intermediate and high school age students have been entered. The displays will be shown March 18-19, 1960, at Wichita University. This is an outstanding public relations movement for both the Medical Society and for science in our District.

This year Education-Business day will be held. This is an opportunity for the businessmen and physicians as well as other professional groups in the city to visit our schools and see the schools in action. Officers and members of the Sedgwick County Medical Society will attend as guests of the teachers.

The Annual Midwest Cancer Conference will once again be held with the usual group of outstanding speakers from many areas of the country. This annual meeting which has become a tradition in our city is well attended from not only the Kansas area but from the entire Midwest. We sincerely hope that our colleagues throughout the state will continue the outstanding support which they have previously given to this meeting.

In the field of public relations the Sedgwick County Medical Society still sponsors a television presentation. Currently a series is appearing on one of the local stations and is called "A Visit to a Doctor's Office." Both patients and doctors appear and the viewers are given an opportunity to see the functioning of a doctor's office. The series on the care of the newborn was widely accepted in the viewing area and this type of activity continues to be a very excellent means of presenting medicine to the public.

Career Day is another activity which does much in the field of public relations. Doctors from the medical society visit the various high schools of the city and present information to the students concerning medicine and its allied fields for those seeking their life's work. A number of doctors from our Society have made this presentation in years past which has been well accepted and received.

The Medical Auxiliary of the Sedgwick County Medical Society has had an active and successful year. The regular meetings which have been well attended have been held throughout the past 12 month period. The Auxiliary is sponsoring a group of young girls in its active and successful future nurses clubs. It is anticipated that the girls in this organization will again visit Kansas University Medical Center and the Topeka State Hospital as a part of their program to interest girls in the field of medicine.

In general, the Medical Society of our District has

had an active and successful year. There have been no great problems presented to us.

This Councilor also wishes to give his appreciation to all that cooperated during the past year.

William J. Reals, M.D., *Councilor*

Twelfth District

During the past year, Kingman and Pratt Counties surrendered their individual charters and will be a combined society under the name Pratt-Kingman Medical Society.

District 12 participated 100 per cent in A.M.E.F. In general during the past year, the Medical Societies of the District as well as the Auxiliaries have devoted most of their attention to Public Relations, which I am sure will be carried on to even a greater extent during the next year.

Albert C. Hatcher, M.D., *Councilor*

Thirteenth District

The past year has seen society meetings well attended with interesting and instructive programs. Considerable thought has been given to the consideration of the problems associated with the care of the elderly individual and the political implication of legislation such as the Forand Bill in Congress. One would say that the past year has seen harmonious and effective medicine in this district.

H. St. Clair O'Donnell, M.D., *Councilor*

Sixteenth District

We have survived our problems and are awaiting the spring thaw. Our total active membership is 43, including one or more of slow pay. Our noble profession should be above ignoble conduct in the payment of dues. This is so important, that delinquents should stand trial in regular meeting to consider rescinding of membership in the Society.

Medical School Dean Wescoe and wife, journeyed long and fast to attend a Northwest Kansas Medical meeting at Colby last fall. They pleasingly obliged us with many interesting pictures, and a discussion of their sojourn to the Philippines.

We have a few new young members, and can recommend good hunting and curing grounds for other "Family Doctors" who can come to our district.

Our new secretary has busied himself, writing the requested letters to our Senators and Representatives. However, his letter to Governor Docking fell on fossil clay, and did not bear fruit. That should make better politicians out of all of us for the next election.

Our Postgraduate meetings have been very well attended and many geriatric "Old Grand-Dad" problems are solved during the cocktail hour.

There seems to be a rather universal attitude of "Let Elmer do it," in regard to educating the public on the various proposed medical care bills. Each councilor and secretary has the A.M.A. written speeches available for any type of public gathering. See your Secretary or Councilor today, and schedule your speeches.

E. F. Steichen, M.D., *Councilor*

Seventeenth District

During the past year the 17th Councilor District has had no major problems. While the doctors here are busy the area is well covered and the people have available medical care.

The major hospital improvement has been in Garden City where St. Catherines Hospital has constructed a new wing which will adequately care for their needs.

H. Preston Palmer, M.D., *Councilor*

THE KANSAS MEDICAL SOCIETY

Annual Meeting May 2-4, 1960

Hutchinson, Baker Hotel

Make Your Reservations Early

Committee Reports

Activities of the Committees of the Kansas Medical Society

Allied Groups

W. M. Cole, Wellington, Chairman; J. J. Basham, Fort Scott; M. L. Belot, Jr., Lawrence; H. O. Bullock, Independence; A. R. Chambers, Iola; F. J. Eckdall, Emporia; F. B. Emery, Concordia; J. H. Gilbert, Seneca; D. A. Huebert, Wichita; J. B. Pretz, Kansas City; D. J. Smith, Overland Park; N. C. Smith, Arkansas City; M. O. Steffen, Great Bend.

A few months ago your committee on Allied Groups met with several representatives of the Kansas Podiatrist Association. They were seeking our Society's aid in their quest for a more professional standing among the disciplines. They reported to our committee some progress that has been made by their association in upgrading the educational standards of their colleges and their profession. They asked our help in three matters. The committee acted upon each of them and makes the following recommendations to the House of Delegates of the Kansas Medical Society.

The Kansas Medical Society should take such steps necessary to assist the Kansas Podiatry Association in becoming recognized under the Kansas Blue Shield program. The Kansas Blue Shield should be urged to recognize certain professional services rendered by the Podiatrist and claims for these services should be paid for by that company.

Their second request was for a seat on the Interprofessional Council of Kansas. Our committee recommends that they be given such a seat.

Our final support was asked to help the Kansas Podiatrist to become licensed under the Kansas Healing Arts Act and be given a place on the Healing Arts Board. They asked our Society to assist them in securing this license without them being required to take the basic science examination. They defend this stand by saying that since their practice is limited to treatment below the ankle their students should spend the time necessary to study the basic sciences in studying this area of the body (foot).

This committee feels their cause is just and recommends to the House of Delegates of the Kansas Medical Society that it support them in this attempt to become licensed under the Act.

Several other matters that were discussed at our meeting concerning other allied groups have already been considered and acted upon by the Executive Committee. I would like to thank the present members of the Committee on Allied Groups for their cooperation this year.

W. P. Cole, M.D., *Chairman*

Anesthesiology

Wray Enders, Kansas City, Chairman; L. L. Bressette, Kansas City; H. J. Brown, Winfield; R. S. McKee, Leavenworth; R. T. Parmley, Wichita; W. F. Powers, Wichita; L. J. Ruzicka, Concordia; H. F. Spencer, Emporia; J. R. Sumner, Hutchinson; F. C. Taggart, Topeka; E. T. Wulff, Atchison.

The committee held its first meeting of the year in Topeka on December 6, 1960. Six members of the committee were present. The committee discussed the following items:

There was a general discussion on Industrial Medicine and Compensation as it applies to the Anesthesiology Committee but no action was taken at this time as there were no apparent problems that would require the attention of this committee.

The members present spent a good part of the meeting discussing a clinical anesthesia mortality study booklet prepared by the Committee on Clinical Anesthesia Study of the American Society of Anesthesiologists, Inc. This booklet was recently completed and a copy was furnished the Anesthesiology Committee by Oral B. Crawford, M.D. of Springfield, Missouri who is a member of the national study group. In the discussion, it was brought out that the state Anesthesiology Society has established a study committee such as the type of committee recommended in the booklet but that the committee has not been active because there have been no cases for review. It was decided that contact should be made with the Department of Vital Statistics to determine whether or not it would be possible to withhold death certificates of persons whose death occurred while under anesthesia. At the present time, the Department of Vital Statistics is conducting such a program and it was felt that three months would be sufficient time to determine whether or not there would be a number of cases for review by the Mortality Study Committee of the state Anesthesiology Society.

It was moved, seconded, and unanimously approved that the state Anesthesiology Society be notified of the activities of this committee and that the cooperation and assistance of this committee be offered to the Anesthesiology Study Committee.

A second meeting of the committee is planned after the Department of Vital Statistics has had adequate time to determine the number of death certificates which might be submitted to the state Anesthesiology Committee Study group.

Wray Enders, M.D., *Chairman*

Auxiliary

L. S. Nelson, Jr., Salina, Chairman; L. G. Glenn, Protection; C. E. Brown, Stafford; L. Cohen, Topeka; L. G. Graves, St. John; E. M. Harms, Wichita; D. A. Kendall, Great Bend; R. E. Pfuetze, Topeka; H. A. Tretbar, Wichita; C. L. Young, Kansas City.

The Kansas Medical Society Auxiliary Committee met recently in the home of Dr. and Mrs. L. G. Graves in St. John. I would first of all like to thank them for the hospitality they gave to this committee. Meeting with us that day was the Executive Board of the Woman's Auxiliary. I have never met a more dynamic group.

It is our responsibility to act as liaison between the Auxiliary and the Kansas Medical Society in all matters concerning organized medicine. We are available at the call of the president of the Auxiliary to assist them in any problems that arise during the year.

This year when all organized medicine has been working to prevent the passage of the Forand Bill we here in Kansas have constantly called upon the Auxiliary to assist us in this battle. They have carried out several letter writing projects under the guidance of Mrs. W. O. Wallace, Atchison, their Legislative Chairwoman. Along this line was the first problem brought forth by the Auxiliary at this joint meeting.

The Auxiliary has been asked to write many letters on legislative problems in the past. They feel that if they had a prepared (form) letter to copy in their own handwriting that this job would be much easier and even more successful from a participation standpoint. They made this request to the committee and it responded with this resolution:

When it becomes necessary to mobilize opinion on legislation, both state and national, utilizing the assistance of the Woman's Auxiliary to the Kansas Medical Society; that a form letter(s) shall be prepared by the Executive Office or a representative body of the Kansas Medical Society. A copy of this form material shall be sent to each member of the Auxiliary for the purpose of copying this material by hand and mailing it to their respective national or state representatives.

The second problem discussed during our meeting was that of a request from the national auxiliary's president. She asked that every teacher and professor in Kansas receive a year's subscription free to the *Today's Health* magazine. This subscription was to be paid for by the members of the Kansas Woman's Auxiliary, either personally or through planned projects.

After receiving the complete picture from Mrs. L. G. Graves, state president, our committee does not believe it possible to comply with this request. Mrs. Graves reports that the cost of providing a subscription to every teacher and professor in Kansas would be in the neighborhood of $32,509. The last year's membership figures of the Kansas State Teachers Association was 41,674 and the present enrollment of the Kansas Woman's Auxiliary is approximately 1,200.

A little over a year ago the American Medical Association decided to discontinue having the Auxiliary sell the *Today's Health*. The Auxiliary which had used this as its major project for years did not receive notice of this change until the June A.M.A. meeting. They have reorganized their *Today's Health* committees and utilized them in other projects, namely A.M.E.F. and legislation activities. This committee would have to be started anew if this project is to be successful.

Mrs. Graves has already written to the national president concerning the Auxiliary's feelings toward undertaking a project such as this. I have been charged by my committee to see if our Society cannot take some action in this matter at the coming A.M.A. House of Delegates meeting in June. Since the original directive came from the Communications Division of the A.M.A., we feel that the A.M.A. House of Delegates should be made aware of the extreme cost of giving a subscription to every educator in our nation. Therefore, we ask our A.M.A. delegates to carry this matter to the floor of the A.M.A.

It has been a pleasure to have served as the committee chairman of the Kansas Medical Society Auxiliary Committee. I would like to thank the members of the committee for their co-operation. Also I would like to thank the members of the Woman's Auxiliary to the Kansas Medical Society for all of the services they have performed during the past year.

L. S. Nelson, Jr., M.D., *Chairman*

Blue Shield Relations

O. R. Cram, Jr., Larned, Chairman; A. H. Baum, Dodge City; P. L. Beiderwell, Belleville; M. A. Brewer, Ulysses; E. W. Christmann, Wamego; Jack A. Dunagin, Topeka; C. W. Erickson, Pittsburg; Wendell Grosjean, Winfield; A. C. Hatcher, Wellington; P. E. Hiebert, Kansas City; H. Penfield Jones, Lawrence; John L. Morgan, Emporia; John R. Neuenschwander, Hoxie; R. T. Nichols, Hiawatha; L. W. Reynolds, Hays; H. R. Schmidt, Newton; Chas. M. White, Wichita; Evan R. Williams, Dodge City.

During the year your Committee on Blue Shield Relations will have held two meetings in addition to meetings in each of the Councilor Districts—one series of meetings was held during the fall of 1959 and a second series of meetings is being conducted at this time and will be completed prior to the annual meeting of the Kansas Medical Society.

The work of the Committee during the fall series of meetings was devoted to the following items:

1. Establishment of Hospital Utilization Study Committees
2. Blue Shield program for 1961
3. Use of District Relations Committees as adjudication committees for "Unusual Charge" cases under the Blue Cross-Blue Shield Extended Benefit Programs
4. Resolution permitting county or regional medical societies to develop special Blue Shield contracts in their areas.

Approximately 80 permanent local Hospital Utilization Study Committees have been established in the state and will be conducting various projects in the study of hospital utilization during the balance of the year. We are quite hopeful that the Committees will make a significant contribution to the field of medical economics and the information developed will be of interest to the physicians and hospitals of Kansas.

The principal item presented to the Committees concerning the 1961 Blue Shield program related to the possibility of developing a no-fee-schedule approach to prepayment. The District Committees were opposed to the adoption of such an arrangement on a state-wide basis. A minority group of committees felt that such a program could work successfully in a limited geographical area. It was also suggested that the principle of area rating should be considered along with this type of program.

With regard to the use of Dictrict Relations Committees as adjudication committees for "Unusual Charge" cases, the majority of the committees agreed that such cases could best be reviewed at a district level by their committees. One committee recommended that such cases be submitted to them for development of all information concerning the case and then be submitted to the state committee for adjudication. Still another committee requested that this adjudication be delegated to Grievance Committees of local county societies. Several counties are preparing to take advantage of the resolution permitting county societies to develop special Blue Shield contracts for their areas. Leavenworth and Lyon Counties have conducted a number of meetings exploring special programs for their areas. Exploratory meetings have been held in Cowley and Harvey Counties. As these programs take shape, a full report will be made to you concerning the nature of the programs.

The current series of District meetings concern a report by Blue Shield of its special objectives for 1960 and the methods by which Blue Shield hopes to accomplish its objectives. In general, the objectives relate to the Blue Cross-Blue Shield reserve, enrollment goals for 1960 and their effort to achieve a greater economy.

Your Committee will make a supplemental report prior to our annual meeting on the special material presented at these meetings and the action taken by your Committee.

O. R. Cram, M.D., *Chairman*

Child Welfare

T. C. Hurst, Wichita, Chairman; M. J. Blood, Wichita; R. D. Boles, Dodge City; M. S. Boyden, Lawrence; W. H. Crouch, Topeka; D. R. Davis, Emporia; R. L. Dreher, Salina; F. A. Gans, Salina; A. C. Irby, Fort Scott; G. F. Jordan, Jr., Wichita; H. P. Jubelt, Manhattan; W. F. McGuire, Wichita; E. A. Martin, Parsons; P. T. Schloesser, Topeka; R. N. Shears, Hutchinson; C. J. Winter, Jr., Kansas City; T. E. Young, Topeka.

The Child Welfare Committee has no committee activity report to make at this time. While there have been no committee meetings as this issue of the Journal of the Kansas Medical Society goes to press it is expected that with the completion of a survey now being conducted by the Maternal and Child Health Division of the Kansas State Board of Health to determine the immunization level of school age children in the state of Kansas, the committee will be meeting to review the results of this survey and to make recommendations as well as to help in the development of a program for improvement in the area covered by this survey.

T. C. Hurst, M.D., *Chairman*

Conservation of Eyesight

J. E. Hill, Arkansas City, Chairman; B. J. Ashley, Topeka; E. J. Bribach, Atchison; L. L. Calkins, Kansas City; C. A. Crockett, Kansas City; F. T. Cultron, Salina; D. O. Howard, Wichita; M. S. Lake, Salina; D. T. Loy, Great Bend; H. E. Morgan, Newton; W. M. Scales, Hutchinson; D. P. Trimble, Emporia; D. D. Vermillion, Goodland.

The Committee on the Conservation of Eyesight has considered several problems during the year, and some of these are of interest to all physicians.

1. It is the opinion of the Committee that sufficient data has been obtained on the glaucoma surveys which have been held in Kansas to indicate that positive glaucoma findings are in keeping with the national average of two per cent and that further surveys would not be of sufficient scientific value to warrant their being carried out.
2. That an educational program should be inaugurated for the benefit of physicians in Kansas engaged in general practice to acquaint them with the technique of taking tensions in the performance of their diagnostic procedures and to encourage all physicians to take ocular tensions.

3. That all medical students graduating from the Kansas University School of Medicine should in the future be instructed in the taking of eye tension and in the performance of other commonly accepted eye examinations useful in the general practice of medicine.

4. It is the opinion of the Committee that the Snellen E Chart is an adequate and usable method of testing visual acuity for Kansas public school children, that more elaborate procedures are prone to bring in many false positives.

It has been a pleasure to serve as Chairman of the Committee on Conservation of Sight.

James E. Hill, M.D., *Chairman*

Conservation of Hearing and Speech

V. R. Moorman, Hutchinson, Chairman; C. W. Armstrong, Salina; J. A. Budetti, Wichita; E. L. Gann, Emporia; C. L. Gray, Wichita; W. P. McKnight, Wichita; E. E. Miller, Pittsburg; R. G. Montgomery-Short, Halstead; W. D. Pitman, Pratt; R. R. Preston, Topeka; G. O. Proud, Kansas City; R. E. Riederer, Olathe; M. J. Ryan, Kansas City.

The Committee on Conservation of Hearing and Speech has held two meetings with a third meeting planned for March. The activities of the committee have been concentrated on plans for standardized forms for reporting of hearing losses by the school audiometrist to the physician, as well as equivalent forms for transmission of the physician's findings and recommendations to the proper school authority. It is also anticipated to have a third form for the collection of statistical data on those students with hearing losses.. As this data accumulates studies may be made that will more accurately delineate the scope of the actual problem.

In conjunction with the Department of Education there will be developed three levels of audiometric testers with certification as to their proficiency:

1. Screening Testers will have minimal training to be able to run air conduction audiograms.

2. Audiometric Technicians will have longer training to enable them to run air and bone conduction audiograms.

3. School Audiologists and Hearing Conservationists will have formal training at the University level to qualify them for the broad scope of their responsibilities.

In the planning stage are courses for the training of audiometric technicians. It is anticipated that these courses will help train not only personnel for school testing but also office audiometric technicians.

The possibility of summer courses for hard of hearing children is being explored and it is anticipated that this project will utilize the major energy of this committee next year.

V. R. Moorman, M.D., *Chairman*

Constitution and Rules

A. W. Fegtly, Wichita, Chairman; T. C. Ensey, Marion; A. C. Harms, Jr., Kansas City; Y. E. Parkhurst, Belle Plaine; A. S. Reece, Gardner; M. M. Tinterow, Wichita; G. L. Thorpe, Wichita; C. E. Vestle, Humboldt.

Meeting of this committee for consideration of work suggested, which included: Review of copy for proposed reprinting of the Constitution and By-Laws; Consideration of request to include six temporary committees as standing committees; Reconsideration of two amendments presented at previous meetings of the House of Delegates and returned to the committee for further consideration; and any new suggestions, was held February 14.

The committees to be made Standing Committees were:

Emergency Medical Care
Perinatal Welfare
Relations with the Bar
Membership Orientation
Postgraduate Study
School Health.

Review of the copy of the revision showed already too many listed Standing Committees, the functions of many overlapping, and in many cases reports of previous years show "No report."

The By-Laws of 1931 list 11 Standing Committees, while we are now asked to bring the number up to 44. The gradual increase has been brought about by successive Presidents making new committees for specific purposes which usually are temporarily quite active, and by request are placed on the Standing List because of apparent value of continuation.

The committee carefully studied this list of new committees, and concluded that as new Standing Committees only one was worthy of independent listing, *i.e.* Emergency Medical Care. Perinatal Welfare and Orientation Membership were left as temporary and subject to judgment of future Presidents, since the work suggested and done by these committees is either finished or about to be discontinued. Relations with the Bar is certainly a function that should be considered by the Legislation and Public Policy Committee and will be so included. School Health can hardly be separated from Child Welfare, so they are combined. Postgraduate Study has always been listed as the function of the Medical School Committee, so these are combined.

Reprinting the By-Laws will not be done until after these amendments are voted upon.

In addition we are presenting a Resolution which we feel should be beneficial to the Society by increasing individual work on committees. The resolution and the amendments are here outlined, and should be voted upon at the last meeting of the House of Delegates in Hutchinson, May 4, 1960.

RESOLUTION

WHEREAS, The value of membership in any organization is enhanced by the responsibilities accepted and the work done by the member, it has been customary that each member have a definite committee appointment and membership of each committee be published in the first JOURNAL OF THE KANSAS MEDICAL SOCIETY published after election of officers for the year, and

WHEREAS, The work of each committee and its value to the Society depends largely on the support and cooperation given to the Chairman, and this is more readily secured by members interested in specific topics;

Resolved, That the Executive Secretary be directed to send annually to each member of the Society before the mid-year a LIST OF ALL COMMITTEES TO BE APPOINTED BY THE PRESIDENT-ELECT FOR THE ENSUING YEAR with prepaid postage for reply designating by check mark or in writing:

1. In what portion of Society work are you most interested? . . . . . .

2. When appointed to a committee will you endeavor to attend meetings and participate in discussion? Yes ( ) No ( )

3. In the following list of committees please check First Choice with figure 1, and Second Choice with figure 2.

A reminder notice attached should call attention to the fact that by checking the committee lists published each year in the June JOURNAL, his assignment and the name of the Committee Chairman is shown.

AMENDMENT NO. 1

WHEREAS, During the past two years successful efforts have been made to consolidate component chartered county societies having limited membership into multi-county component chartered societies under the provision of By-Laws, Chapter XII, Section 16, and,

WHEREAS, There remain a few chartered county societies of limited membership not willing to consolidate even though membership in that county has dropped below the low minimum for organization of component society (3) as established by the original Territorial Charter of the Kansas Medical Society, and,

WHEREAS, By-Laws, Chapter XII, Section 16 provides only for voluntary surrender of previously granted Charter. It is deemed advisable to include in the section a clause authorizing the Council to revoke a chartered component society whose membership drops below the original limit.

Resolved, By-Laws, Chapter XII, Section 16, shall be amended to read: Section 16. Physicians residing in counties where no component county society exists or residing in two or more adjoining counties in which the number of practicing physicians desiring affiliation with the Kansas Medical Society is too limited to assure successful and beneficial meetings, may form joint county or district societies whose principles, constitution and by-laws are recognized and approved by the Council, and by virtue of such membership may be accepted as members of this Society.

Where component societies have already been chartered by the Council, original charters must be surrendered if so requested by a majority vote of the membership, or in case membership in a component society has dropped below the minimum membership (3) required by original Territorial Charter of the Kansas Medical Society, the Council shall revoke the original charter, urging the members to maintain society membership by merging with adjacent component society or multi-county component society. A new multi-county charter shall be granted after certification of individual membership by the proper officials of the component societies surrendering their charters. State Society dues or assessments shall be paid through the newly formed component society.

AMENDMENT NO. 2

WHEREAS, At a previous session an amendment was presented providing for a change in formation of Nominating Committee which was not accepted but returned to the committee for further study, and,

WHEREAS, A new plan described below seems more applicable and advantageous,

Resolved, That By-Laws, Chapter VI, Section 1 be amended to read:

Section 1. The Nomination Committee shall be appointed by majority vote of the Council at the first meeting after the date of each annual meeting. The Committee shall consist of the President-elect as chairman, and five active members, three of whom shall have held no previous elective office in the Kansas Medical Society, and no member shall be eligible to serve on more than two (2) consecutive nominating committees.

The committee shall meet not later than ninety (90) days prior to the annual session and present for publication in the JOURNAL a list of candidates for each elective office, consist-

ing of one or more candidates for the office of President-elect, First Vice-President, Secretary, Treasurer, Delegate-elect to the American Medical Association, and in the event that vacancy or pro tem appointment occurs in the office of President-elect, a President, and furthermore three or more candidates for the offices of Second Vice-President and Alternate Delegate to the American Medical Association. Whenever possible or practical the candidate for Treasurer shall be named from residents of the city or vicinity of the location of the central office.

Amendment No. 3

Whereas, A vacancy in the office of President-elect because of death, resignation or removal could be a possibility any time during the term of office, and provision in the By-Laws should cover that possibility. The *elected* President-elect if still in office automatically becomes President.

By-Laws provide in case of vacancy in other elective offices appointment by the Council for *completion* of an elected term. The President is the choice of the House of Delegates. To accomplish this end two amendments are necessary.

Resolved, That By-Laws, Chapter VIII, Section 10, the Council, shall be amended in line 2 by the inclusion of the President-elect in the officers, in emergency, to be temporarily replaced, and making it read:

"In the event of death, resignation, or removal in the office of *President-elect,* Second Vice-President, Secretary, or Treasurer or a Councilor, the Council shall elect a successor to fill the vacancy." The remainder of the section remains, and,

Resolved, That By-Laws, Chapter VI, Section 1, Elections, be amended by the addition of the phrase "and a President in event of vacancy or Pro Tem appointed in the office of President-elect" after line 18. The remainder of the section to remain.

Amendment No. 4

Whereas, The committee has been asked to include certain committees now functioning as temporary, as Standing Committees and after study it appears that the functions are already included in other committees. The committee recommends that certain committees not expected to be continuous be left on a temporary basis, and that others be combined with older committees of same basic work, and,

Whereas, The number of standing committees has steadily increased with many cases of overlapping functions.

Resolved, That the following committees be included in the list of Chapter XI, Section 1a with all sections rearranged alphabetically and consecutively numbered.

Committee on Emergency Medical Care
Committee on Public Policy and Legislation
Committee on Medical Schools and Postgraduate Work
Committee on Child Welfare and School Health
Committee on Nominations, and
Committee on Anesthesia now numbered Sec. 7 be dropped and the functions in No. 7 be deleted, and that their functions be described as follows, They shall be voted upon separately.

Amendment No. 5

Section ... THE COMMITTEE ON EMERGENCY MEDICAL CARE shall be composed of seven or more members, at least one-half (½) of whom including the chairman shall have served on the retiring committee. The function of this committee shall be to encourage and promote the formation of local or regional emergency care plans or organizations which would cooperate with and co-ordinate plans and organizations already formed in the state. In all cases cooperation with Red Cross, Civil Defense, Police departments, Public Health organizations, and all other Welfare groups necessary in an emergency is to be sought and utilized.

They shall meet at the call of the Chairman.

Amendment No. 6

Section ... THE COMMITTEE ON LEGISLATION AND PUBLIC POLICY shall be composed of the Executive Committee of the Council, all active Past-Presidents, and such other members as deemed advisable. Under the direction of the Council it shall represent the Society in keeping in touch with professional and public opinions and ADVOCATE legislation to secure the best possible medical results for the whole people and promote the general good of the community in local, state, and national affairs and elections. Sub-committees for special purposes may be formed.

Five designated members of the committee shall function together with stated members or committee of the Bar Association in considering matters involving Medicine and the Law and make recommendation on Medico-Legal matters involving members or Society as a whole. At least one-half (½) of the members of this committee including the retiring chairman AND at least two (2) of the five cooperating with committee from the Bar, shall have served on the retiring committee. The committee shall meet at the call of the Chairman.

Amendment No. 7

Section ... THE COMMITTEE ON MEDICAL

SCHOOLS AND POSTGRADUATE STUDY shall be composed of at least seven members. It shall be the duty of this committee to secure all available data concerning the activities, progress and needs of the medical schools of this state, and to make annual report of the same to the House of Delegates. It shall also endeavor to establish and maintain a close relationship between the schools of medicine in this state and the Society, and shall remain in close contact with other universities or colleges in the state which offer pre-medical or basic science courses. It shall also further scientific activities of this Society such as refresher and postgraduate courses. Its aim and goal shall be continued advancement in medical knowledge for all physicians by means of programs and courses accessible to all and of approved value. At least one-half (½) including the chairman, shall have been members of the retiring committee. They shall meet at the call of the chairman.

Amendment No. 8

Section ... THE COMMITTEE ON CHILD WELFARE AND SCHOOL HEALTH shall consist of seven (7) or more members of whom at least one-half (½) including the chairman shall have served on the retiring committee. It shall be the duty of this committee to study and secure all available data on the general subject of child welfare as related to health, and the field of pediatrics in general, to disseminate information thereon, and to assist the profession in elevating the standards of this branch of medicine. It shall be their especial function to study existing conditions, rules and regulations regarding the health, welfare, and instruction of students in the schools both scholastic and physical training.

Sub-committees may be formed as deemed necessary. They shall meet at the call of the chairman.

In conclusion I wish to thank the members of the committee who attended the meeting, Vice-President Glover, and Executive Assistant James Imboden, all of whom assisted materially in the substance and preparation of this report.

A. W. Fegtly, M.D., *Chairman*

Control of Cancer

L. W. Reynolds, Hays, Chairman; D. L. Berger, Mission; J. P. Berger, Wichita; G. L. Campbell, Arkansas City; W. G. Cauble, Wichita; A. M. Cherner, Hays; J. C. Dysart, Sterling; A. A. Fink, Topeka; W. A. Grosjean, Winfield; H. L. Hiebert, Topeka; J. D. Hilliard, Medicine Lodge; W. J. Kiser, Wichita; J. R. Kline, Wichita; M. V. Laing, Kansas City; C. H. Miller, Parsons; N. C. Nash, Wichita; C. R. Openshaw, Hutchinson; D. C. Reed, Wichita; R. H. Riedel, Topeka; D. S. Ruhe, Kansas City; R. P. Schellinger, Emporia; P. H. Schraer, Concordia; B. E. Stofer, Wichita; G. M. Tice, Kansas City; L. E. Vinzant, Wichita; H. M. Wiley, Garden City; R. W. Wright, Jr., Kansas City.

The principal work of the Committee on Control of Cancer this year consists of a formulation of a working agreement between the Committee on Control of Cancer and the Kansas Division of the American Cancer Society. After three meetings and consultation with the members of the Kansas Division of the American Cancer Society, we would like to offer the following resolution:

Whereas, There is a distinction on a philosophical level which must be recognized between a lay health organization, even though doctors of medicine dominate its policy, and a lay health organization with doctors dominating its policy but where the Kansas Medical Society as an entity feels itself in an advisory position, and,

Whereas, The Medical Society should not exert its control over funds or the expenditure of funds raised through public subscriptions for a lay health organization but should consult upon matters of professional activities. This item is suggested with full appreciation of the fact that physician members governing such lay health organizations are perfectly competent to act within the sphere of professional interest without the support of the Kansas Medical Society. Consultation with the Kansas Medical Society will result in a broader approval and cooperation of the individual practicing physician, and,

Whereas, The present situation appears as follows: The Kansas Medical Society has a Committee on the Control of Cancer, appointed annually in May by the president, which has no direct line of communication with any activities of the Kansas Division of the American Cancer Society. This committee has no budget of funds. The Kansas Division of the American Cancer Society has a Medical and Scientific Committee of which all members are members of the Kansas Medical Society. It has authority to appropriate money for projects within the limits of a budget authorized by the Board. Within this committee are three subcommittees, each consisting of four physician members. They are Professional Service Committee, Professional Education Committee, and Project Review Committee. Activities of these subcommittees are controlled by the above named larger committee.

Resolved, That the following working agreement with the Kansas Division of American Cancer Society be adopted:

1. Sufficient copies of the minutes of every meeting of the State Committee on Control of Cancer shall be given to the Kansas Division so each member of the Medical and Scientific Committee may receive them.
2. Sufficient copies of the Medical and Scien-

tific Committee minutes of each of the three subcommittees of the Kansas Division shall be given to the Kansas Medical Society so each member of the State Committee on Control of Cancer may have them.

3. Except where the chairman feels an executive session is to be preferred, the excutive secretary of the Kansas Division shall be invited to meetings of the Control of Cancer Committee, and an executive secretary of the Kansas Medical Society working with the Control of Cancer Committee, shall be invited to the meetings of the Medical and Scientific Committee.

4. The president of the Kansas Division of the American Cancer Society in October of each year shall appoint to the Medical and Scientific Committee three members of the Kansas Medical Society Committee on Control of Cancer.

5. The president of the Kansas Medical Society in May of each year shall appoint to the Committee on Control of Cancer three members for the Kansas Division's Medical and Scientific Committee. There shall be no regard or concern if these names overlap.

6. Before the first of November of each year, the Committee on Control of Cancer, at a regular meeting, shall elect from the membership of the Kansas Medical Society, whether these be members of the committee or not, two physicians who will serve as consultants on any of the subcommittees of the Medical and Scientific Committee of the Kansas Division of the American Cancer Society.

7. The Committee on Control of Cancer is invited to create projects and submit through the Medical and Scientific Committee request for appropriations of money with which the Committee on Control of Cancer may conduct such projects.

8. The Committee on Control of Cancer is requested to establish a set of standards for Cancer Programs, supervise, control and suggest budgets for such programs.

9. In general, the Kansas Division shall, without referring to the Committee on Control of Cancer, raise funds, conduct public education, and disburse funds, as approved by the Medical Scientific Committee.

10. Wherever the medical aspect enters, the Kansas Medical Society will be consulted by the Kansas Division of the American Cancer Society through the established channels.

Respectfully submitted.

L. W. Reynolds, M.D., *Chairman*

Control of Tuberculosis

J. L. Morgan, Emporia, Chairman; A. L. Ashmore, Wichita; A. Baude, Topeka; R. M. Brooker, Topeka; J. A. Butin, Chanute; R. I. Canuteson, Lawrence; P. R. Carpenter, Kansas City; A. M. Cherner, Hays; L. H. Coale, Kansas City; R. F. Conard, Emporia; M. J. FitzPatrick, Kansas City; J. K. Fulton, Wichita; R. A. Lawson, Chanute; R. R. Melton, Marion; J. M. Mott, Topeka; G. W. Nice, Topeka; R. M. Owensby, Mankato; C. Pokorny, Halstead; J. W. Spearing, Columbus; C. F. Taylor, Norton; F. A. Trump, Ottawa; P. H. Wedin, Wichita.

The Committee on Control of Tuberculosis has again spent a busy year.

At our meetings we have attempted to establish an exchange of information with the members of the Governor's Advisory Commission for Tuberculosis Sanatoria. We have been pleased to have representatives of this group meet with us at each of our meetings.

Under the splendid editorial supervision of Doctor Martin FitzPatrick, four up-to-date articles on the changing picture of tuberculosis in Kansas appeared in the Journal of the Kansas Medical Society during the year 1959 having been written by members of the Committee. These four articles are being printed in booklet form and will be distributed in the near future to all physicians licensed to practice medicine in the State of Kansas and to other selected interested agencies such as hospitals and nurses' training schools. This cooperative venture has been made possible by the financial help and material efforts of the Kansas Medical Society, Kansas State Board of Health, and the Kansas Tuberculosis and Health Association.

The Committee has gone on record as favoring outpatient tuberculosis clinics and is in the process of arriving at a recommendation to the House of Delegates regarding the financing and management of these clinics.

The question of supplying antituberculosis drugs to outpatients is still a difficult problem to solve and a recommendation from the Committee to the House of Delegates is now being formulated by a subcommittee.

The question of a uniform policy on the handling of new patients, to include the criteria for dismissal, was considered and it was felt this was an item of business for the Governor's Advisory Commission.

The Committee recommends to the incoming Committee the following projects:

1. Further investigation into the status of the patients previously seen at Hillcrest who are not now on record as being under follow-up treatment.

2. The incoming Committee should study the success of the present program of detecting tuberculosis in the mental institutions since the discontinuance of the use of the Kansas State Board of Health's photofluorographic units.

3. The issue of outpatient clinics, and the mechanics and means of financing outpatient drug therapy

to patients with tuberculosis should be followed by the Committee.

John L. Morgan, M.D., *Chairman*

Emergency Medical Care

F. C. Beelman, Topeka, Chairman; G. L. Ashley, Chanute; K. F. Bascom, Manhattan; R. W. Blackburn, Council Grove; F. L. Brochu, Kansas City; G. L. Gill, Sterling; L. F. Glaser, Hutchinson; A. J. Horejsi, Ellsworth; C. C. Hunnicutt, Sabetha; H. H. Hyndman, Wichita; N. M. Jenkins, Salina; D. S. Klassen, Newton; G. E. Manahan, Lawrence; O. F. Prochazka, Liberal; R. E. Speirs, Dodge City; J. F. Thurlow, Hays; D. P. Trees, Wichita.

Your chairman has attempted to hold several meetings of the Committee on Emergency Medical Care during the past year. On both occasions the weather served to reduce the number of members who could attend. The discussions were interesting, however, and illustrate the lack of knowledge and the confusion existing in all areas of the Civil Defense program from the national to the county levels.

Everyone acknowledges the advantage of having a completely prepared Civil Defense program well in advance of its need. There is almost no interest in planning this phase of the activity at the present time. The committee believes a more receptive attitude can be obtained if the work of the committee is directed toward potential disasters, such as acts of nature or large-scale accidents in which local health facilities are unable to cope with the services required.

Even for purposes of this type of care, there are only meager outlines and they are often inconsistent for setting up units.

Your committee, after exploring the above problems, recommends each component medical society in the State of Kansas assign teams of physicians who will be available for disaster work if needed. Smaller societies might profitably unite with others in the area for this purpose. The committee believes it would add efficiency if such teams could be organized around hospital staffs. Attention must be given to the retention of physicians for local needs and care should be exercised in providing both for the disaster team and for those who remain at home that variety of skills be maintained.

When such lists are completed, the names of the physicians involved and the specialty in which they are prepared to serve should be submitted to this committee through the executive office. In each area one person should be named chairman.

This committee is working closely with the State Civil Defense Committee. Should teams be required for any purpose whatever, it would provide such service with far less delay if they were set up in advance and could be called as units. Therefore, your committee requests the cooperation of each county medical society in establishing disaster teams and hopes each society will send this list to the central office as rapidly as the planning has been completed.

Ancillary health services will be organized through the State Civil Defense program and will be available to support medical units as needed. For the present, therefore, until a better national program can be formulated, it appears to your committee the above outline will at least provide a nucleus of a disaster service which could be called into operation quickly if needed. Your committee is continuing to plan toward a more effective and complete program. As soon as this is accomplished, the recommendations will be sent to each component society.

F. C. Beelman, M.D., *Chairman*

Endowment

C. V. Black, Pratt, Chairman; R. A. Nelson, Wichita; R. J. Ohman, Dodge City; J. L. Perkins, Hutchinson; J. W. Randell, Marysville; R. Schrepfer, Kansas City; F. L. Smith, Jr., Colby; C. C. Underwood, Emporia.

The Endowment Committee held one meeting. This was in the Jayhawk Hotel, in Topeka, Kansas, October 4, 1959. Only two members of the committee were able to attend this meeting.

The following is the report for 1959:

There were 544 contributors who gave a total of $15,258.50. One of these was a contribution of $1,000.00 by Riley's Pharmacy in Wichita. $2,472.00 was contributed by the Kansas Medical Society which was the last contribution from the postgraduate fund. There were about 50 less contributors than in 1959. Without the contribution of the Kansas Medical Society there would have been a drop of about $3,000.00 in overall contributions. Shawnee and Arkansas City were 100 per cent contributors at $15.00 per member. The Tri-county society was 100 per cent at $10.00 per member. Many members in each of these societies gave additional amounts. There were 42 "In Memoriam" contributions from the members. There were 64 contributions from the Woman's Auxiliary. The members who have tried the "In Memoriam" donations are highly pleased with the acceptance of the families of the deceased. They are therefore making more of them each year. The donors list reads about the same each year. An assessment of $15.00 per member would be more equitable.

Cyril V. Black, M.D., *Chairman*

Fee Schedule

W. J. Reals, Wichita, Chairman, Pathology; W. R. Allen, Kansas City, Radiology; H. J. Brown, Winfield,

Anesthesiology; J. G. Claypool, Howard, Internal Medicine; G. W. Fields, Scott City, General Practice; W. H. Fritzemeier, Wichita, Dermatology; L. W. Hatton, Salina, Psychiatry; J. E. Hill, Arkansas City, Ophthalmology; T. C. Hurst, Wichita, Pediatrics; G. B. Joyce, Topeka, Orthopedics; J. G. Kendrick, Wichita, Obstetrics and Gynecology; W. R. Lentz, Seneca, General Practice; W. P. McKnight, Wichita, ENT; P. W. Morgan, Emporia, Internal Medicine; C. R. Openshaw, Hutchinson, Thoracic Surgery; J. E. Roderick, Salina, Urology; S. L. Vander Velde, Emporia, Surgery.

The Committee on Fees of the Kansas Medical Society has been active during the past year.

Once again the Subcommittee which functions as an executive group has met on many occasions to consider business and the full committee has been called into session on several occasions to approve actions of the Executive Committee and also to conduct its business.

The first meeting was held with the full committee in attendance on November 1, 1959, in Wichita, Kansas. The committee at this meeting approved the format for the state-wide survey of fees which was to be held since the House of Delegates had directed such a study be done. At this meeting a time table of the work of the committee for the year was adopted which started with the decisions of the committee and terminated with submitting the report to the House of Delegates by May 1. At this meeting also representatives of the pathologists of Kansas and the obstetricians and gynecologists of Kansas were present and submitted points concerning their fields of interest. These were accepted by the Committee for future action. The full committee agreed that each member would contact the field of medical practice in which he engaged and serve as a representative to the members of this group.

The executive committee of the fee committee met on Wednesday evening December 2, 1959. The executive committee at this meeting approved items of business for the conducting of the survey and approved many of the technical matters which were necessary before the survey could be mailed out.

Following the meeting of the executive committee the forms which had been obtained from the Council on Medical Service of the American Medical Association were prepared by the offices of the Executive Secretary of the Kansas Medical Society and were subsequently mailed to all members of the Society in practice in Kansas. The Committee would like to pay special tribute to Mr. Oliver Ebel for his help and encouragement in this large undertaking. Through his office the actual mailing and handling of the material was done and also the replies were received and forwarded for statistical study. Mr. Ebel with the assistance of the Committee also prepared the promotional material for both the JOURNAL OF THE KANSAS MEDICAL SOCIETY and also for direct mailing to the members.

At this writing over 50 per cent of the doctors in the state have filled in the necessary information on the survey form and have returned it to the Executive office. This is a much better return than any other state has reported from the standpoint of participation by the doctors.

Because by the nature of the work a great deal of statistical information must be obtained it is not possible at this writing to give a complete report of the survey and its results. Consequently, a supplemental report will be issued at the time of the annual meeting of the House of Delegates of the Kansas Medical Society containing the information which has been gathered by your committee.

The committee would like also to thank Mr. Jim Parmiter and Mr. Proctor Redd from Blue Cross-Blue Shield of Kansas who have given invaluable assistance and encouragement in this survey. The Chairman wishes to thank each member of his committee who have given so much of their time for the betterment of medicine in Kansas.

William J. Reals, M.D., *Chairman*

GENERAL PRACTICE AWARD

F. E. Dillenbeck, El Dorado, Chairman; C. W. Bowen, Topeka; J. A. Howell, Wellington; L. E. Leigh, Overland Park; B. P. Meeker, Wichita; G. P. Neighbor, Kansas City; C. A. Newman, Topeka; N. H. Overholser, El Dorado; A. K. Ratzlaff, Goessel; S. Zweifel, Kingman.

It is our purpose once a year, or whenever we feel we have an outstanding candidate, to make a nomination to the A.M.A. for the General Practitioner of the Year Award. Last year this committee proudly submitted the name of Conrad M. Barnes to the national committee as the candidate from Kansas. A good deal of work was done by this committee and various other people and organizations to secure the award for a Kansas G. P. As you know another practitioner was chosen for the honor and our disappointment was great.

The Committee on the General Practice Award met early this year to decide whether or not we should nominate a Kansas practitioner this year. We decided to solicit the County Medical Societies for their recommendations.

County Societies submitted only one name to the committee and after weighing the facts we then decided not to enter a Kansas physician.

I would like to thank the committee for their full cooperation throughout the year. It was my pleasure

to be their chairman. I hope the incoming committee on General Practice Award will again meet early and prepare an excellent enough nomination to bring this honor to our state.

F. E. Dillenbeck, M.D., *Chairman*

Gerontology

E. G. Dimond, Kansas City, Chairman; J. O. Austin, Garden City; L. J. Beyer, Lyons; J. M. Catlett, Emporia; T. Dechairo, Westmoreland; D. M. Diefendorf, Waterville; G. M. Edmonds, Horton; H. A. Flanders, Hays; V. L. Jackson, Altamont; Ronald McCoy, Coldwater; J. J. Marchbanks, Oakley; R. F. Morton, Arkansas City; T. V. Oltman, Riley; J. W. Parker, Burlington; D. V. Preheim, Newton; E. S. Rich, Hutchinson; D. L. Rose, Kansas City; H. L. Songer, Lincoln; C. E. Stevenson, Neodesha; G. A. Surface, Ellis.

Your committee stood ready to meet in the intent that the general problems of ageing might be reviewed. The committee was advised that several factors currently in operation made it appear that such meeting should be postponed. Therefore, no meeting of this committee was held.

To the best knowledge of your chairman the reason for postponement are the interest of the Society as a whole in problems related to the Forand Bill made this among the foremost of current Society activities. Since this was directed through the officers of the Society it was believed unnecessary to channel further activities with reference to this type of legislation through this committee. The individual members of this committee participated as did all members of the Society in this project.

A second unresolved problem over which the committee apparently could have no immediate influence was the pending White House conference on ageing. The committee is aware each state is expected to conduct a survey on problems of ageing and possible solutions for such problems. The committee is aware that the federal government has appropriated a sum of money to be disbursed through the states to defray expenses of such survey. In Kansas this money was rejected and to the best knowledge of your chairman there is no survey being conducted nor is there a budget available for such survey. This committee through an expression from the office of the Kansas Medical Society has made itself available to the state of Kansas in any effort that may be requested where a survey of health needs of the ageing is contemplated. Up to the time of this writing there has been no indication from any governmental source that the committee might be permitted to act in this capacity.

The White House Conference on Ageing will be held in 1961. Several members of this committee have expressed a willingness to attend that conference as delegates from Kansas. The Kansas Medical Society has submitted a list of names for possible appointment. It is our understanding Kansas is entitled to 27 delegates to this conference. Your chairman has been advised the complement of Kansas delegates has been filled and this has been done without the utilization of a single doctor of medicine although a list of names has been submitted for possible appointment.

Therefore for the above reason although your committee has expressed its willingness to serve it has found no projects upon which it might act and therefore your chairman felt it would serve no purpose at the present time to call the committee together. The committee stands ready and willing to meet at any time this might be desired.

E. G. Dimond, M.D., *Chairman*

History

J. G. Hughbanks, Independence, Chairman; J. F. Barr, Ottawa; H. C. Clark, Wichita; A. W. Corbett, Emporia; O. W. Davidson, Kansas City; R. D. Grayson, Overland Park; I. A. Koeneke, Halstead; R. H. Major, Kansas City; H. P. Palmer, Scott City; R. A. Schwegler, Lawrence; G. S. Voorhees, Leavenworth.

One year ago upon the celebration of the centennial of the Kansas Medical Society the committee on History completed a monumental task which marked a milestone for this society. Your present committee realizing it served the first step of a new era was somewhat at a loss to determine how it should proceed. Although some correspondance and considerable conversation on the subject took place the committee did not feel the necessity for a formal meeting.

Your committee on history believes it would be desirable to record and preserve events of current interest whereby a future historian might find his task of compiling the second hundred years of the society much easier than was the case upon the present occasion. The committee hopes members will refer to members of the executive office any material of past or present interest so this might be filed for future use. A number of such items were received during the year and were referred to the office. Some of these contained information of early history of the society not previously assembled. Others were items of present activity.

The committee commends the JOURNAL for its effective and valuable manner of preserving items of current interest realizing this will ultimately be the best source of obtaining a history of the Kansas Medical Society.

Your committee on history makes one further suggestion that of publishing in the JOURNAL a summary

of the minutes of committee meetings recorded. Recorded as they currently are in the committee files these could become mislaid and difficult to assemble at a later date. If they were summarized in the JOURNAL a permanent record would thereby be obtained.

The chairman commends to the future committee renewed activities in preserving the history of the society and believes this to be a most worthwhile permanent project.

J. G. Hughbanks, *Chairman*

HOSPITALS

E. R. Gelvin, Concordia, Chairman; G. B. Athy, Columbus; H. G. Bayles, Fredonia; W. M. Campion, Liberal; M. D. Christensen, Kiowa; J. D. Colt, Manhattan; F. R. Frink, Lawrence; E. T. Gertson, Atwood; J. L. Grove, Newton; G. F. Gsell, Wichita; R. H. Hill, Meade; D. B. Parker, Ness City; A. J. Rettenmaier, Kansas City; H. B. Russell, Great Bend; C. D. Snyder, Winfield; E. B. Struxness, Hutchinson; R. E. White, Garnett.

Your Committee on Hospitals concluded a three-year project with adoption of principles for a Kansas Voluntary Hospital Advisory Commission. The Committee spent its effort during current year in three meetings with officials of the Kansas Hospital Association. The chairman is pleased to report the meetings were conducted on a friendly basis and that the administrators representing the Hospital Association endorsed the idea of the creation of such a commission.

The delay has been occasioned by a strong indication from hospital administrators that the Hospital Advisory Commission for Kansas should be granted a broader responsibility than was presented to and adopted by the House of Delegates one year ago. With changes of no importance to the purpose of the proposal, the Executive Board of the Hospital Association approved the material adopted by the House of Delegates. Changes suggested were accepted by representatives of the Committee on Hospitals because they served merely to clarify certain items hospital administrators felt to be ambiguous. These changes preserved all principles the House of Delegates approved.

The current delay in the placing of this project into operation consists of the fact that hospital administrators want to include a more thorough and specific examination of the hospitals than was envisioned by the medical profession. Hospital personnel states this portion of the work of the Advisory Commission will be conducted by hospital administrators and will not affect the medical complement of this Commission. Hospital administrators believe much of the additional work necessary can be accomplished through correspondence in the filling out of a prepared questionnaire. The Hospital Association is currently working on this phase of the project.

Therefore, the Kansas Voluntary Hospital Advisory Commission will operate in two fields; **1.** to be conducted by hospital personnel, which will examine the hospitals in areas of interest to the hospital administrator and **2.** by the medical complement of this commission in areas of professional services.

Your Committee makes one further recommendation which was proposed by hospital administrators and agreed to by Committee on Hospitals. This is to follow the following formula for certification of hospitals. Each hospital in Kansas now fully accredited by the National Joint Accreditation Commission shall be given a certificate of accreditation or approval by the Kansas Voluntary Joint Commission. This involves approximately 44 hospitals. All hospitals eligible for accreditation by the National Commission, but which are not currently accredited, shall not be examined by the Kansas Commission except under unusual circumstances because such hospital, if approved by the Kansas Commission, could then neglect to further effort in having approval by the Joint Commission. All hospitals ineligible for accreditation by the Joint Commission may, if they care to do so, apply to qualify under the standards of the Kansas Commission.

In the above proposal it will greatly reduce the vast amount of work otherwise necessary by this Kansas Voluntary Hospital Advisory Commission. It will require the active examination of the operational procedures of only about ⅓ the hospitals of Kansas. These will be the smaller hospitals and those for which the Commission is primarily organized.

The chairman understands the Council of the Kansas Medical Society has already named the medical representatives to this Joint Commission and will ask them to serve immediately after the Kansas Hospital Association has submitted its proposal and this has been agreed upon by the Hospital Committee of the future. As soon as this is completed, the project will be immediately placed into operation.

E. R. Gelvin, M.D., *Chairman*

INDUSTRIAL MEDICINE

E. C. Sifers, Kansas City, Chairman; V. D. Alquist, Baxter Springs; W. L. Anderson, Atchison; J. A. Budetti, Wichita; A. S. J. Clarke, Prairie Village; C. L. Francisco, Kansas City; W. L. Good, Mission; G. F. Gsell, Wichita; G. S. Hopkins, Topeka; J. J. Hovorka, Emporia; C. A. Isaac, Newton; J. F. Lance, Jr., Wichita; F. L. Loveland, Topeka; J. C. Mitchell, Salina; R. H. Moore, Lansing; F. A. Moorhead, Neodesha; A. R. Mueller, Leavenworth; P. C. Nohe, Kansas City;

W. F. Powers, Wichita; H. L. Regier, Kansas City; R. W. Urie, Parsons; C. L. White, Great Bend.

The Committee on Industrial Medicine held two extremely well attended meetings in Kansas City, Kansas on September 13, 1959 and February 28, 1960. In addition to the meetings held by the Committee as a whole, a number of smaller meetings attended by the chairman and members of the executive office staff were arranged with the Commissioner of Workman's Compensation, labor and industry representatives, the Director of the Legislative Research Council and State Chamber of Commerce officials.

At the first meeting in September, the president, Dr. Glenn R. Peters, expressed his extreme interest in the affairs of this particular Committee and stated that in his opinion the Committee should confine itself at this time to reviewing and recommending changes for improving the present Workman's Compensation Law. The members of the Committee were in complete agreement.

The way was previously paved for this project by an act of the state legislature. In its last regular session, the Legislature formally requested the Legislative Research Council to conduct hearings for the purpose of reviewing the present Workman's Compensation Law. The Legislative Council was further requested to make a formal report on its findings during the 1961 session of the Legislature.

The discussion of the first Committee meeting resulted in three motions which affect the fee schedule presently used in the Compensation Manual. The Commissioner was asked to adopt the Kansas Relative Value Schedule in order to make the fees in the Manual commensurate with fees charged by physicians in the state of Kansas. The Committee requested further that a point value of $5.00 be adopted.

The Commissioner of Workman's Compensation, Mr. Elmer Schumacher, was guest speaker at the second meeting of the Committee. Mr. Charles Billings, executive director of the Kansas Hospital Association was also a guest. In his remarks, the Commissioner discussed a number of the problem areas in the law which he will discuss with the Legislative Research Council.

In the business that followed, the Committee members learned of an invitation, extended by the Director of the Legislative Council for representatives from the Committee, to appear before the Council for a hearing on Workman's Compensation later on in the year. Prior to this hearing, the Committee will prepare material for presentation.

It is the hope of the Committee that this long awaited opportunity will result in a more improved Workman's Compensation Law for the State of Kansas. Members of the Committee will be held over in order that this important project may be successfully completed.

E. C. Sifers, M.D., *Chairman*

Legislation

F. E. Wrightman, Sabetha, Chairman (Executive Committee plus A.M.A. Delegates).

Your committee on legislation is pleased to report a considerable activity during the present year. On a national level interest in the Forand Bill has occupied much attention. This has required a considerable amount of activity from each component society as well as from individual members. Your chairman believes the response in Kansas to have been excellent and commends the society for its effort in behalf of preserving free-enterprise and the private practice of medicine in this nation against formidable opposition.

On a state level the committee had little to do during the 1960 Budget Session of the Legislature. Your chairman wishes to report an action by the Council which expressed an interest in education generally at all levels and because of this action an effort was made to aid schools in their attempt to improve standards. Most of the work was done by the president of the Kansas Medical Society and a special committee of which L. S. Nelson, Sr. of Salina was the chairman. This committee stood by willing to assist as needed but was not called into session because no immediate crisis over which the society might have any considerable influence arose.

The committee recommends to the society a continuing effort to prevent legislation both at a state and national level adverse to the free-enterprise principles upon which America was founded and hopes that each member of the society will continue his personal activities in this cause.

F. E. Wrightman, *Chairman*

Maternal Welfare

H. M. Floersch, Kansas City, Chairman; A. H. Baum, Dodge City; R. M. Carr, Junction City; E. X. Crowley, Wichita; H. M. Foster, Hays; E. S. Gendel, Topeka; D. E. Gray, Topeka; R. G. Heasty, Manhattan; R. L. Hermes, Lawrence; J. G. Kendrick, Wichita; K. E. Krantz, Kansas City; J. G. Lee, Jr., Kansas City; O. L. Martin, Salina; M. D. Morris, Topeka; W. R. Roy, Topeka; P. T. Scholesser, Topeka; C. E. Shrader, Newton; R. Sohlberg, Jr., McPherson; J. C. Schroll, Hutchinson; E. F. Steichen, Lenora; D. L. Traylor, Emporia; H. L. Wilcox, Lawrence; L. E. Woodard, Wichita.

The Maternal Welfare Committee held two meetings during the past year. The October meeting was held in Topeka, and the March meeting was held in Junction City. Twelve maternal deaths were reviewed

by the Committee and attendance at both meetings was excellent. The cooperation of the Kansas physicians in this project has been gratifying. In nearly every instance they have been more than willing to help the examining physician in the preparation of the report. This has made for a more accurate study and a better classification of the maternal death. Only two physicians, in the last year, offered any resistance to this study and one of these physicians was not a member of the State Society.

In a recent issue of the KANSAS MEDICAL JOURNAL, Dr. David Gray published an article on maternal mortality in this State in the years 1956-57-58. His article pointed out the rather rapid decrease in maternal deaths in Kansas in recent years. In 1958 there were 2.3 obstetric deaths per 10,000 live births, which is well below the national rate of 3.5 for the same period. The article also had an outline of the procedures for investigating the maternal deaths by this Committee. Physicians not familiar with this procedure should refer to the KANSAS MEDICAL JOURNAL, February, 1960, page 74.

With direct obstetric deaths approaching zero, this Committee has been concerned with other problems under the general category of Maternal Welfare. Acting in an advisory capacity to the Vital Statistic Section of the State Board of Health, this Committee has been considering further improvement in the birth certificates, both for liveborn and deadborn infants.

Plans are being made for the preparation of a Manual for Obstetrical Care, to further improve the management of obstetrical patients throughout the State. Experiences gained from the studies of the maternal deaths during the past few years will help in the preparation of this publication. Upon completion of the material for this manual, it will be presented to the Kansas Medical Society, the Kansas Obstetrical Society, and the Kansas Chapter of the Academy of General Practice, for approval and sponsorship.

The Committee especially wants to thank Dr. Evalyn Gendel, Assistant Director of Maternal and Child Health, the State Board of Health, for her tireless effort in the organization of the material for our work. Without this help it would be impossible to accomplish all that has been done in the past few years.

H. M. Floersch, M.D., *Chairman*

MEDICAL ASSISTANTS

R. E. Bula, Lyons, Chairman; W. M. Campion, Liberal; W. Cox, Wichita; M. C. Eddy, Hays; K. J. Gleason, Independence; T. D. Ewing, Larned; F. L. Smith, Jr., Colby; M. M. Tinterow, Wichita.

The primary function of this committee is to work with the Medical Assistants in the state of Kansas. The committee stands ready to function at the request of the Medical Assistants.

R. E. Bula, M.D., *Chairman*

MEDICAL ECONOMICS

J. A. McClure, Topeka, Chairman; P. D. Adams, Osage City; J. N. Blank, Hutchinson; H. L. Bogan, Baxter Springs; K. L. Graham, Leavenworth; J. K. Griffith, Winfield; G. E. Kassebaum, El Dorado; M. B. Miller, Topeka; B. A. Nelson, Manhattan; L. S. Nelson, Jr., Salina; E. B. Scagnelli, Dodge City; F. G. Schenck, Burlingame; R. C. Stanley, Paola; C. H. Steele, Kansas City; G. C. Steinberger, Abilene; W. K. Walker, Sedan.

It is the primary purpose of this Committee to review and recommend comprehensive group programs specifically designed to fulfill the needs of the members of this Society. It has been with this purpose in mind that the Committee has met twice previously this year. A final meeting prior to the State Meeting has been scheduled for April 3, 1960.

In our first session, representatives of the companies underwriting the various plans now in force were invited to give a progress report.

1. Washington National reported a satisfactory loss ratio in line with the 15 per cent reserve required by law and an enrollment increase over the past year of 30 per cent. Of 1,300 eligible members, 82 per cent are covered under this plan.

2. The American United Life Insurance Company reported 230 members enrolled or 25 per cent of the eligible membership. There have been four deaths during the time this plan has been in effect. The loss ratio has not been excessive and reserves are at a satisfactory level.

3. The C. O. Finley Company of Chicago reported in absentia on their plan for accidental death and dismemberment. Six hundred applications were required before medical requirements could be waived and since only 163 applicants were reported by the company, the committee voted to withdraw the endorsement of the Kansas Medical Society but allowing individual solicitation.

4. A progress report from the C. Ray Tyler Agency in Wichita will be given at the April 3 meeting and a new plan will be presented to supplement those now in effect with that agency.

5. Following our regular meeting, the Committee was invited to a dinner and business meeting as guests of the Kansas Health Insurance Council.

The Committee met on January 18, 1960 for the purpose of discussing problems in the field of medical economics with Mr. H. W. Ginty, legal counsel for the Medical Protective Company of Fort Wayne, Indiana. Proper liability limits were discussed and

the thought was established that this is an individual matter requiring expert counsel.

Mr. Ginty reported that contrary to a popular belief, that malpractice law suits are on the increase, the Medical Protective Company statistics show that the number of cases are actually decreasing. Individual judgments however are higher.

For some time now, there has been a need for some method of evaluating the group proposals which are continually being presented to the Medical Economics Committee for consideration. At the same time, the membership needs a similar method for evaluating group plans now being offered through the Kansas Medical Society.

The Committee is working to develop such a guide. This new concept will be considered at our April 3 meeting. If the Committee approves this project, it will then be presented to the House of Delegates for final consideration.

I wish to thank the members of the Committee for their many contributions and deep interest in the projects undertaken this year.

J. A. McClure, M.D., *Chairman*

Medical Schools

P. W. Morgan, Emporia, Chairman; R. G. Ball, Manhattan; O. W. Davidson, Kansas City; M. C. Eddy, Hays; R. W. Fernie, Hutchinson; D. B. Foster, Topeka; L. F. Glaser, Hutchinson; L. G. Glenn, Protection; A. E. Hiebert, Wichita; H. P. Jones, Lawrence; L. C. Joslin, Harper; D. Lukens, Hutchinson; L. F. McKee, Cottonwood Falls; D. Marchbanks, Hill City; J. C. Mitchell, Salina; J. G. Phipps, Wichita; M. Snyder, Salina; Leland Speer, Kansas City; N. V. Treger, Topeka; W. H. Walker, Eskridge; I. J. Waxse, Oswego.

This Committee on Medical Schools was held on Sunday, December 13, 1959 at the School of Medicine. On this occasion the Chancellor of the University of Kansas, F. D. Murphy, M.D. and Dean of the School of Medicine, W. Clarke Wescoe, M.D. and several heads of departments at the Medical School spoke to the committee concerning problems existing at the medical school. Many of these related to finance some of which were subsequently adjusted by action of the Kansas Legislature. Many additional and some of the previously existing problems are still unresolved.

A portion of the committee meeting was devoted to a discussion of ways in which relationships between the school of medicine and the Medical Society could be improved. Many expressed their appreciation of the splendid present relationships but the few areas of conflicting opinions that were mentioned were found to be individual in nature or of such magnitude nationally that almost nothing concrete could be accomplished in those areas. As an example of the latter is the problem of intern and residency training. Members of the school as well as members of the committee present all felt this problem needed study. But it will probably have to be solved on a national rather than on a local level.

Perhaps the most significant event of the meeting was a resolution unanimously endorsed that the Kansas Medical Society take an active interest in the improvement of all phases of education whether directly related to the field of health or not. This resolution was subsequently submitted to the Council of the Kansas Medical Society where it was adopted. Your committee recommends this approval to be further accepted by the House of Delegates and that active interest in improving the quality of education at all its levels in Kansas for the sake of creating a better trained citizenry be in the best interest of all persons of Kansas and for that reason this should become a continuing project of the Kansas Medical Society.

P. W. Morgan, M.D., *Chairman*

Medicare

During the past year Medicare Review Committees in Kansas were not called on for a great amount of activity. This was caused by a reduction in the services authorized under this program at a Federal level. Since early winter, however, the program has been re-established and it is anticipated in the future that some renewed activity will take place.

The Medicare Review Committee for Kansas is now divided into five segments: There being one in the area of Kansas City, one in Manhattan, one in Salina, one in Topeka and one at Wichita. Each of these is given the cases arising from the area designated. These committees meet as may be required and attempt to resolve in as a fair and as equitable a manner as is possible under the Federal regulations imposed upon them, the various claims that for any reasons do not qualify for usual handling.

Your chairman respectfully requests that whenever a physician cares for a Medicare patient, he observe the regulations as carefully as possible providing under Medicare only such care as is included in the program and that he scrupulously avoid charging a patient any additional fee for such services as are covered and that he exercise some care in the report submitted. Wherever the report is complete the Committee has little difficulty in determining the approval that may be necessary. It is only when a considerable fee is charged with a very small explanation of the services rendered that the Committee and the physician caring for the patient find themselves in disagreement. These can be practically eliminated if the physician will exercise a little additional care

in explaining the services he rendered and the need for them. With just a little improvement in this the work of the Committee can be considerably lightened and the satisfaction of this program can certainly be improved. It is the hope of your Committee this can be accomplished during the coming year.

Since I have this opportunity, I wish on the part of the Kansas Medical Society to thank all of the physicians who have devoted so much of their time unselfishly and without compensation in this work.

L. S. Nelson, Sr., M.D., *Chairman*

Membership Orientation

K. L. Graham, Leavenworth, Chairman; J. O. Baeke, Overland Park; E. S. Brinton, Wichita; G. W. Cramer, Parsons; J. H. McNickle, Ashland; R. H. O'Donnell, Ellsworth; R. H. O'Néil, Topeka.

Your Committee on Membership Orientation was appointed by the president to serve one special project. It has long been a belief of several in this Society that if some information could be obtained through advising new physicians about regulations as well as services available to the practice of medicine, it would assist them during the early period of establishing a practice.

This Committee met twice and established principles upon which such informative material will be prepared. It was decided that a summary of the law governing the practice of medicine should be included, that the availability or resources of the State of Kansas be announced, that some of the services of the Kansas Medical Society and component societies be listed, that list of at least all prominent private welfare agencies be given, that the voluntary health agencies operating in Kansas be listed, that the regulations involving participation with Blue Shield be listed, that certain federal programs be included such as Medicare, the regulations covering the use of narcotics and so forth and that this material include any other pertinent information that might be useful to a young physician.

Because of the expense involved in the preparation of this material in the form of a single booklet, the Committee recommends this material be assembled from the various sources wherever it might be available and included in a packet that could be assembled. This packet might then be sent with a letter of welcome from the president of the Kansas Medical Society to each new physician entering the State of Kansas. It is recognized their addresses would not be accurate as listed by the Healing Arts Board because the examination is taken prior to their selection of a place to practice. Negotiations are currently in progress with the United States Bureau of Narcotics Licensing for the correct addresses and if this is successful, it is recommended the packet be sent to each physician whose first narcotic permit is issued in Kansas.

The Committee further recommends the Councilor of the district in which the new physician locates be notified of his presence and that he be advised of the advantages that might be obtained through a personal visit to the new doctor in the hope he could be interested in becoming a member of his component county society, of the State Medical Society, and of the A.M.A.

There will be only small expense involved in the completion of this project because wherever material may be assembled from other sources, this will be done. Your Committee on Orientation, however, respectfully requests of the House of Delegates the permission to continue this project and to place it into operation immediately.

K. L. Graham, M.D., *Chairman*

Mental Health

F. C. Newsom, Wichita, Chairman; A. J. Adams, Wichita; H. V. Bair, Parsons; A. P. Bay, Topeka; E. P. Carreau, Wichita; I. C. Case, Topeka; O. R. Cram, Jr., Larned; H. E. Dittemore, Liberal; J. A. Dunagin, Topeka; T. L. Foster, Halstead; D. Greaves, Kansas City; J. A. Grimshaw, Topeka; L. W. Hatton, Salina; J. C. Hirschberg, Topeka; G. W. Jackson, Topeka; P. C. Laybourne, Jr., Kansas City; H. Lazar, Wichita; J. S. Menaker, Wichita; T. F. Morrow, Wichita; D. M. Rosenbaum, Newton; W. F. Roth, Jr., Kansas City; W. C. Schwartz, Manhattan; R. E. Switzer, Topeka; P. W. Thompson, Topeka; D. R. Wall, Wichita; W. A. Warren, Wichita; M. E. Wright, Lawrence.

One meeting of the Committee on Mental Health was held in Topeka on November 8, 1959. At that time the session was held to prepare an agenda of activities for the coming year. Among these were suggestions that further efforts should be made to attempt to revise and modernize the presently antiquated commitment laws for the State of Kansas, and that effort should be given toward improving laws governing the disposition of sex offenders.

The Committee also felt the necessity for establishing a better understanding of psychiatry among the physicians of Kansas and recommended that a series of brief articles on various phases of psychiatric medicine be prepared by members of the Committee and submitted to the JOURNAL for publication.

Since the principal activity of this Committee for the past several years has been that of obtaining a series of better laws governing the care of patients with mental illness, the Committee has nothing of significant importance to request of the House of Delegates at this time. The Committee is pleased to note that a difference of opinion regarding the licensing of hospitals caring for patients with mental ill-

ness previously existing between the Board of Health and the State Board of Social Welfare is now being resolved and as soon as this is accomplished the Committee will again prepare proposed provisions of the Statutes covering the admission of patients to mental hospitals and when this effort is completed the results will be submitted for approval.

Your chairman attended the A.M.A. Conference on Mental Health in Chicago in November. The representatives for the various states were present to discuss the hospitalized patient suffering from mental illness.

F. C. Newsom, M.D., *Chairman*

Necrology

O. R. Clark, Topeka, Chairman; D. E. Gray, Topeka; R. Greer, Topeka; D. Lawson, Topeka; J. A. Segerson, Topeka.

The Committee on Necrology submits the following list of members of the Kansas Medical Society whose deaths have been reported since the last meeting of the House of Delegates:

Name and Address	*Age*	*1959*
Donald MacRae, M.D., *Topeka*	52	Apr. 26
Charles Davis McKeown, M.D., *Wichita*	67	Apr. 29
L. A. Donnell, M.D., *Wichita*	53	May 1
Percy A. Pettit, M.D., *Paola*	75	May 22
Lang F. Bowman, M.D., *Holyoke*	74	May 23
Marion F. Russell, Sr., M.D., *Great Bend*	74	May 31
Norval W. Robison, M.D., *Bison*	75	June 10
Clyde Smith, M.D., *Rossville*	77	June 15
John W. McGuire, M.D., *Neodesha*	79	July 16
John N. Carter, M.D., *Garnett*	61	June 26
Walter O. Quiring, M.D., *Hutchinson*	72	July 3
Clifford C. Nesselrode, M.D., *Kansas City*	79	July 18
Frank A. Eckdall, M.D., *Emporia*	88	July 30
Mildred Curtis, M.D., *Iola*	79	Oct. 4
Fred E. Harvey, M.D., *Minneapolis*	77	Aug. 6
B. C. Beal, M.D., *Clearwater*	83	Oct. 14
M. P. Ballard, M.D., *Delphos*	50	Nov. 20
Charles J. Bliss, M.D., *Perry*	78	Nov. 19
John T. Swanson, M.D., *Independence*	80	Nov. 16
J. G. N. Soanes, M.D., *Kansas City*	84	Nov. 4
James Grant Lee, M.D., *Bonner Springs*	91	Dec. 20
Rolla L. Strobach, M.D., *Kansas City*	49	Dec. 23
		1960
Clyde Wilson, M.D., *Emporia*	76	Jan. 17
Frederick W. Lemon, M.D., *Salina*	84	Jan. 19
Ernest H. Decker, M.D., *Topeka*	64	Jan. 26
Leo V. Turgeon, M.D., *Topeka*	69	Mar. 5

Orville R. Clark, M.D., *Chairman*

Nominating

M. C. Eddy, Hays, Chairman; C. W. Miller, Wichita; B. A. Nelson, Manhattan; J. H. Peck, St. Francis; H. N. Tihen, Wichita.

Your Nominating Committee met with each member in attendance. According to the By-Laws, this Committee is required to present at least one nomination for each elective office except that not less than three names shall be submitted for the office of Second Vice President and Alternate Delegate to A.M.A.

The Committee found a great many in the Kansas Medical Society who would serve as officers with distinction. Its problem was much more one of reducing the list than one of assembly. After a long session the Committee finally agreed upon five nominations for the position of Second Vice President and is unanimous in its conviction that each physician in this group would make the Kansas Medical Society a most excellent president. Where more than one name appears for an office they are listed alphabetically.

President-Elect

H. M. Glover, M.D., Newton. Graduate of University of Illinois, College of Medicine, 1916. Served as Captain in the Medical Corps of the U. S. Army, 1917-19. Certified to the American Board of Surgery, 1939. Has held many positions in the Society, including that of Councilor. He is currently First Vice-President.

First Vice-President

Norton L. Francis, M.D., Wichita. Graduate of the University of Nebraska School of Medicine, 1935. Performed active duty with the U. S. Naval Reserve, 1942-46. Was certified to the National Board of Otolaryngology, 1941. Served medicine in many capacities. Has been president of the Sedgwick County Medical Society. Is currently Alternate Delegate to the A.M.A. and Second Vice-President.

Second Vice-President (listed alphabetically)

Max S. Allen, M.D., Kansas City. Graduate of the University of Kansas School of Medicine, 1937. Served as Major in the Medical Corps of the U. S. Army, 1942-45. Was certified to the American Board of Internal Medicine, 1944. Is currently Assistant Professor of Medicine at the University of Kansas School of Medicine.

G. E. Kassebaum, M.D., El Dorado. Graduate of Northwestern University School of Medicine, 1923. Saw active duty during World War I and in World War II was on the Selective Service Board. Is a fellow in the American College of Surgeons and is currently president of the Kansas Chapter. Has been active in Blue Shield and in numerous committees. Has been chairman for several years of the Committee on Medical Economics.

Henry St. Clair O'Donnell, M.D., Ellsworth.

Graduate of Washington University, St. Louis, 1917. Served on active duty with the U. S. Army, 1918-19. Is a fellow in the American College of Surgeons. Among positions held are Alternate Delegate to A.M.A. and numerous committees. Is currently a member of the Kansas State Board of Health and a Councilor of the Kansas Medical Society.

H. Preston Palmer, M.D., Scott City. Graduate of the University of Kansas School of Medicine, 1929. Served with the U. S. Army, 1917-18. In World War II was an examiner for Selective Service Board. His practice is General Medicine. Among positions held are the office of presidency of the Finney County Medical Society and Councilor of the Kansas Medical Society.

J. W. Randell, M.D., Marysville. Graduate of University of Louisville, 1916. Has served many years on the Selective Service Board. Engaged in General Practice with a special interest in Surgery. Has long been a leader in his county society and has served on numerous committees of the Kansas Medical Society, including the chairmanship of the Endowment Committee and two terms as Councilor.

Secretary

George E. Burket, Jr., M.D., Kingman. Graduate of the University of Kansas School of Medicine, 1937. Is a member of the American Academy of General Practice and has served as president of the Kansas Chapter. He has also been on the National Economics Insurance Committee. He has served all offices of his county medical society and in the Kansas Medical Society has been on numerous committees. He is currently Secretary.

Treasurer

John L. Lattimore, M.D., Topeka. Graduate of the University of Texas, 1918. His military experience was concluded prior to his medical education. Is certified to the American Board of Pathology, 1937. Has served in the Kansas Legislature and is a former president of the Kansas Medical Society. Is currently Treasurer.

A.M.A. Delegate

Lucien R. Pyle, M.D., Topeka. Graduate of Rush Medical College, 1928. Served four years with the U. S. Navy during World War II. Has been chairman of the Medical Advisory Committee to Selective Service, 1949-54. Is certified to the American Board of Obstetrics and Gynecology, 1941. Was editor of the JOURNAL and president of the Kansas Medical Society. Is currently Delegate to the A.M.A. from Kansas.

Alternates to A.M.A. Delegate (listed alphabetically)

Cyril V. Black, M.D., Pratt. Graduate of the University of Texas, 1930. Has served with the Selective Service Board. Is a fellow of the American College of Surgeons and a member of the American Academy of General Practice. Is currently president of his county medical society and chairman of the Committee on Endowment which represents Kansas for A.M.E.F. Has also served as Alternate A.M.A. Delegate from this state.

Thomas P. Butcher, M.D., Emporia. Graduate of Rush Medical College, University of Chicago, 1934. Served with the Medical Corps of the U. S. Army, 1942-46. Is certified to the American Board of Surgery, 1947. Has been president of his county medical society and has held numerous positions with the Kansas Medical Society. Was president one year ago. Is A.M.A. representative in Kansas on National Legislation.

Glenn R. Peters, M.D., Kansas City. Graduate of the University of Kansas School of Medicine, 1937. Is certified to the American Board of Surgery, 1950. Has served as president and secretary of his county medical society. Has been councilor of the Kansas Medical Society and is now completing service as its president.

Murray C. Eddy, *Chairman*

PATHOLOGY

C. J. Weber, Salina, Chairman; R. J. Eilers, Kansas City; A. A. Fink, Topeka; C. A. Hellwig, Halstead; I. Joffe, Kansas City; W. E. Luedtke, Emporia; W. J. Reals, Wichita.

In the course of the past year, the Committee conducted two business meetings. The first was held in Kansas City on November 15, 1959. A second meeting was held jointly with the Board of Directors of the Kansas Society of Pathologists.

The following topics were discussed in the joint meeting mentioned above.

1. The most important single project of this Committee is the program now being developed to contact state universities, colleges and junior colleges in regard to the training of laboratory technologists. The plan is to select pathologists over the state who will be given prepared material in order that they may discuss a "planned program" with students and administrative heads of universities and colleges in Kansas.

2. It is the goal of the Committee to conduct two meetings a year with the medical technologists and representatives of the State Society of Pathologists for a discussion of mutual interests.

If the Committee can achieve a working relationship with the schools of Kansas which train laboratory technologists, this will be a major accomplishment and the realization of a long-time goal. This program will be conducted prior to the time when schools are finishing second semester of this school year.

C. J. Weber, M.D., *Chairman*

Perinatal Welfare

W. H. Crouch, Topeka, Chairman; V. E. Bolton, Kansas City; H. P. Jubelt, Manhattan; R. C. Knappenberger, Wichita; K. E. Krantz, Kansas City; O. L. Martin, Salina; R. E. Pfuetze, Topeka; P. T. Schloesser, Topeka; R. N. Shears, Hutchinson; T. E. Young, Topeka.

This Committee held meetings the past year in Topeka on November 29, 1959 and in Emporia on February 7, 1960. Considerable business was conducted and one very important goal of the Committee will be realized at the time of the State Meeting in Hutchinson this May. The activities of the Committee resulted in the following accomplishments:

1. One of the most important projects of the Committee has been the effort put forth to establish local hospital perinatal mortality study committees.

To help hospitals establish these committees, a letter over the signatures of the chairman and the president, Dr. Glenn R. Peters, was mailed to the chiefs of staff in all Kansas hospitals of over 500 deliveries requesting the establishment of Perinatal Mortality Study Committee. As a guide to these hospitals, copies of "A Guide for the Study of Perinatal Mortality and Morbidity," published by the American Medical Association in 1959; "A Guide for the Development of Perinatal Mortality and Morbidity Programs in Kansas Hospitals," prepared by this Committee; and a pamphlet entitled "Perinatal Mortality, Every Physician's Concern," published by the Child Health and Welfare Division of the Kansas State Board of Health, were furnished.

A follow-up program will be conducted to learn of the progress by local hospitals in this field and the assistance of the Committee will be offered to hospitals who desire it.

2. An addendum for the guide on "Care of the Newborn" prepared last year by this Committee was completed this year, with the co-operation of the State Board of Health. The addendum deals with the staphylococcic problem in the nursery and brings this section of the guide up to date in regard to this specific subject.

3. It has long been my desire and that of the Committee to plan an outstanding program in the specialty fields of obstetrics and pediatrics for the Annual State Meeting. Such a program has been arranged for the meeting in Hutchinson this year.

The program which begins at 11:00 a.m. on May 3, will have Ned Small, M.D. (private practitioner) from Prairie Village, Kermit Krantz, M.D., chief, Department of Obstetrics at the Kansas University Medical Center and Edith Potter, M.D., Professor of Pathology in the Department of Obstetrics and Gynecology at the University of Chicago, as guest speakers. The program will include a luncheon, a panel discussion and social hour starting at 4:00 p.m. An invitation to attend this program has been extended to the membership of the Kansas Medical Society.

We feel much has been achieved by the Committee this year. I wish personally to thank the Committee members for their interest and enthusiasm. A special vote of thanks belongs to Dr. Patricia Schloesser of the Kansas State Board of Health for her many contributions to the work of this Committee.

W. H. Crouch, M.D., *Chairman*

Postgraduate Study

W. H. Algie, Kansas City, Chairman; G. E. Burket, Jr., Kingman; M. H. Delp, Kansas City; D. B. Foster, Topeka; S. R. Friesen, Kansas City; D. Lawson, Topeka; E. L. Mills, Wichita; E. J. Ryan, Emporia.

This Committee is appointed for the purpose of meeting with heads of the School of Medicine at the University of Kansas to plan the circuit courses that will be conducted in this state for the coming year. Annually this Committee is called into session at one occasion during which time this discussion is completed.

This meeting is planned for a date prior to the Annual Session, but too late to be included as a report in the JOURNAL. Your chairman, therefore, respectfully requests permission to make a supplementary report at the time of the Annual Session, at which time it will be possible to summarize the plans made by the Committee for circuit courses to be presented in Kansas during the coming year.

W. H. Algie, M.D., *Chairman*

Public Policy

T. P. Butcher, Emporia, Chairman; C. M. Barnes, Seneca; C. H. Benage, Pittsburg; W. F. Bernstorf, Winfield; W. P. Callahan, Wichita; O. W. Davidson, Kansas City; M. C. Eddy, Hays; E. S. Edgerton, Wichita; C. S. Huffman, Columbus; J. L. Lattimore, Topeka; F. L. Loveland, Topeka; N. E. Melencamp, Dodge City; C. W. Miller, Wichita; B. A. Nelson, Manhattan; L. S. Nelson, Sr., Salina; J. H. A. Peck, St. Francis; L. R. Pyle, Topeka; H. N. Tihen, Wichita.

The Committee on Public Policy, as may be noted by its membership, consists of all past presidents of

the Society with the most recent president annually its chairman. One meeting was called of this Committee which was held in Wichita on Saturday, November 7, 1959. The conduct of business was informal where each member was invited to present any ideas he might have in mind for the general benefit of the Society.

The subject of the Forand Bill was considered at some length. In addition to much discussion of items recorded elsewhere, this Committee recommended that detail men representing the various drug firms might be of assistance in stimulating interest among the medical profession to combat the Forand Bill. The Committee recommends the American Medical Association approach the pharmaceutical industry of the United States in an effort to acquaint the detail men with this problem so they might advise the physicians upon whom they call of the danger involved. They could then also bring recommendations to them concerning effective work that could be accomplished individually.

The Committee also discussed two experiments in self-rated groups enrolled under Blue Shield. The Lyon County Plan and the Leavenworth Plan were the two involved. It was the consensus that more individual effort in many localities should be carried on to experiment with improvements that might be made in pre-paid health protection.

This Committee also recommended to the Society that each component society evaluate its particular problem concerning the aged population. It was felt that knowledge of a situation locally would be a prerequisite before a plan could be devised that would help solve whatever problem might exist. The locally conducted survey need not embody a great expense or effort. A brief perusal of hospital records, a short survey of nursing homes, a quick analysis of physician's personal records could do much toward creating a better understanding of the problem of the aged within any given area. With this information it would then be possible for the local society to develop a plan that might be of assistance to the aged population. This information would also be most effective in presenting an argument to persons on the national level who declare, often without evidence of accuracy, that the aged are being neglected or that they cannot afford to pay for their health services.

If each county society in this state could identify the problem, the combination of this effort would give the State of Kansas a reply to accusations. It might well be that the aged people are not suffering from lack of care or that it is possible that the statement often heard that the aged are unable to pay for their care may not be true. Until this information can be determined and supported with facts, it is difficult to categorically deny it. Your Committee, therefore, respectfully submits this project to the House of Delegates for approval with the request that the House of Delegates implement the project by referring it to all the county medical societies of this state.

T. P. Butcher, M.D., *Chairman*

Public Relations

T. P. Butcher, Emporia, Chairman; S. A. Anderson, Clay Center; C. H. Benage, Pittsburg; E. W. Crow, Wichita; A. H. Dyck, McPherson; J. L. Lattimore, Topeka; J. W. Manley, Kansas City; G. Marshall, Colby; C. W. Miller, Wichita; L. W. Patzkowsky, Kiowa; V. E. Wilson, Kansas City.

A number of possible projects have come to the attention of your chairman which might be included in a positive program of public relations for the Kansas Medical Society. Since many of these involve an additional expenditure and because the budget of the Kansas Medical Society now approaches its income, the Committee has been reluctant to embark upon programs that will increase such expenditure.

The Committee will meet prior to the Annual Session and beg leave for permission to submit the supplementary report at that time.

T. P. Butcher, M.D., *Chairman*

Relations With Bar Association

K. E. Voldeng, Wellington, Chairman; L. G. Allen, Jr., Kansas City; T. R. Hamilton, Kansas City; J. B. Jarrott, Hutchinson; C. R. Rombold, Wichita; E. J. Ryan, Emporia; J. A. Segerson, Topeka; R. E. Stowell, Kansas City.

The membership of this Committee, composed of Kansas Bar Association and the Kansas Medical Society representatives, can be rather proud of the progress we report here. In the three meetings held during the past year, a number of important items have been examined and discussed. While we have not resolved every issue, it is my feeling that a better understanding of our mutual problems is being brought about through this co-operative effort. The enthusiasm of the Committee as a whole and the excellent representation at all of our meetings speaks very well for the future.

The first meeting of the year took place on October 16, 1959 in Wichita. An election of officers resulted in the following choices: Dr. Karl E. Voldeng, Chairman; Mr. Charles Henshall, Secretary. The membership of the four standing committees established during the first year remains the same.

1. Committee on Injury Rating
   Charles Rombold, M.D., Wichita
   John Q. Royce, Salina

2. Committee on Professional Relations
   J. A. Segerson, M.D., Topeka
   Charles Henshall, Chanute
3. Committee on Forms
   Edward Ryan, M.D., Emporia
   Lee E. Weeks, Kansas City
4. Investigating Committee
   Karl E. Voldeng, M.D., Wellington
   Ford Harbaugh, Wellington

The first important issue taken up by the Committee this year came in the form of a request by the legal components of this Committee for increased availability of hospital records to members of the legal profession in matters concerning personal injury and compensation cases. The Committee, after endorsing the principle of this request, asked the Subcommittee on Professional Relations to take this up with the Kansas Hospital Association.

The Bar Association representatives then proposed that a plan for the pre-judgment of malpractice lawsuits similar to the plan used by Pima County, Arizona, be used. It was decided that further study was needed before any action could be taken.

On November 22, 1959, the Committee met with Kansas Hospital Association representatives in Emporia to discuss the availability of hospital records. It was the final opinion of most of those present that it was not practical to establish a general policy making these records automatically available but rather that each case would have to be considered on an individual basis.

The last meeting of this Committee was held in Topeka on February 3, 1960. The attendance was 100 per cent with 16 persons present. First on the agenda was the subcommittee report on the November 22 meeting. There was no formal action taken but Mr. Ford Harbaugh expressed the feeling that progress has been achieved through this discussion and certainly a better mutual understanding.

Other business consisted of more discussion on the Pima County Plan with specific instructions for more research in order that a decision may be reached in the near future.

So that we may have a record for the JOURNAL, the legal components of this Committee are listed as follows:

Mr. David H. Fisher, Topeka
Mr. Ford Harbaugh, Wellington
Mr. Charles Henshall, Chanute
Mr. John Royce, Salina
Mr. Lee E. Weeks, Kansas City

I wish to thank all of the members of this Committee for their interest and co-operation.

Karl E. Voldeng, M.D., *Chairman*

Rural Health

J. G. Claypool, Howard, Chairman; P. D. Adams, Osage City; V. E. Brown, Sabetha; F. G. Freeman, Pratt; M. F. Frederick, Hugoton; R. E. Grene, La Crosse; H. W. Hiesterman, Quinter; P. H. Hostetter, Manhattan; R. L. Krause, Goessel; E. E. Long, Humboldt; R. P. McCarthy, Kansas City; L. W. Patzkowsky, Kiowa; D. R. Pierce, Topeka; J. G. Rowlett, Paola; J. Scanlon, Horton; M. E. Schulz, Russell; E. F. Steichen, Lenora; C. R. Svoboda, Chapman; M. H. Waldorf, Jr., Greensburg; H. O. Williams, Cheney; D. H. Wood, Pittsburg; E. D. Yoder, Denton.

It has been my recent privilege as your chairman of the Rural Health Committee to attend the national Rural Health Conference, held in Grand Rapids, Michigan. Mr. Oliver E. Ebel our Executive Secretary acted as the Discussion Leader for this meeting and Mr. Dallas F. Whaley, Assistant Executive Secretary also attended as a Kansas representative. This was, in my opinion, one of the most interesting and informative programs to be sponsored by the A.M.A. for many years. Each speaker was carefully chosen for his interest in a particular segment of rural health. Every speech brought forth new ideas and information. Unfortunately, this information fell on too many empty chairs. The rural people, while represented by their various agencies such as the Farm Bureau, were not there. I could not tell if it was bad weather or a lack of communication between the farm people and our profession that caused these empty seats.

This brings us to the report of our committee for this year. For many years now the Kansas Medical Society has felt the same lack of communication between itself and the rural public that was evidenced by the small attendance in Grand Rapids. Last year we were the hosts of the National Rural Health Conference held in Wichita. From the work that went into planning and executing this meeting grew an idea for a Kansas Rural Health Council. This plan, while not new, was accepted and encouraged by the various rural agencies.

This year that plan took roots. We called together some dozen or more organizations interested in rural health, and set down to plot a course. At this first meeting each organization expressed a desire to be a part of the Council. Their reason, as many of them stated, was to provide better communications between the medical profession and their groups. They had also felt a need for more and better understanding in the field of rural health.

The real responsibility belongs to the incoming committee. They are charged with the duty of organizing and conducting the first real meeting of this new Council. The future of this two-way street of communication depends upon the way they carry out their charge.

I would like to thank the members of the Rural Health Committee who have devoted much of their time to the formation of this idea. This has been a double burden on many of them since it was but a few months ago that they were called upon to organize the Wichita Conference. It has been a pleasure to serve as their chairman and I am looking forward to the coming years as the Council grows.

J. G. Claypool, M.D., *Chairman*

Safety

R. R. Snook, McLouth, Chairman; T. G. Duckett, Hiawatha; A. C. Eitzen, Hillsboro; J. A. Grove, Newton; A. E. Hiebert, Wichita; C. T. McCoy, Hutchinson; J. H. A. Peck, St. Francis; H. E. Snyder, Winfield; H. B. Sullivan, Jr., Shawnee; R. P. Weltmer, Beloit; R. C. Ye, Kansas City.

The Committee held a meeting this year on October 25, 1959 in Topeka, Kansas. One other meeting will probably be held just prior to the State Meeting if enough information is available for Committee discussion on previously selected subjects.

One area which interested the Committee is that of physical examinations for drivers licensed to operate automobiles in the State of Kansas. While this has been accomplished in some states, the availability of physicians to conduct such examinations in relationship to the great number of Kansas automobile drivers makes the feasibility of such a project doubtful.

Cards for hospitals, physicians' offices and billfolds are in the process of being prepared listing the location and telephone numbers of the poison control centers in the state.

Investigation of the amount of first aid training received by ambulance drivers in the state is being conducted and inquiries are being made as to how adequately equipped are emergency rooms in Kansas hospitals.

It is hoped that some answers to these questions will be available for discussion at the next Committee meeting.

R. R. Snook, M.D., *Chairman*

School Health

C. M. Barnes, Seneca, Chairman; M. D. Athon, Overland Park; W. F. Bernstorf, Winfield; V. Branson, Lawrence; J. A. Butin, Chanute; W. H. Crouch, Topeka; E. D. Greenwood, Topeka; E. S. Gendel, Topeka; R. Greer, Topeka; P. C. Laybourne, Kansas City; H. Lutz, Augusta; W. C. Menninger, Topeka; R. A. Moon, Prairie Village; F. D. Murphy, Lawrence; W. E. Myers, Iola; R. A. Nelson, Wichita; R. R. Snook, McLouth; H. R. Wagenblast, Salina.

Besides three regular committee meetings which were held in Topeka at the Hotel Jayhawk on July 12, 1959, September 20, 1959 and March 20, 1960 the members of this Committee have been busy throughout the year with participation in the monthly meetings of the Kansas School Health Advisory Council. This Committee had a very active part in the School Health Symposium at the University Medical Center in October 1959. Your chairman, Dr. E. D. Greenwood, and James Imboden, executive assistant of K.M.S. also attended the National Conference of Physicians and Teachers in Highland Park, Illinois the mid-part of October, 1959.

Your School Health Committee acts to represent you in the present day school health program which deals with health instruction, healthful environment, and health services. This Committee has acted in liaison between the Kansas Medical Society and the newly formed Kansas School Health Council. Our function has been and will continue to be as a consulting and advisor group to the educator as he better fulfills his responsibility in the field of health education and instruction. For a long time physicians have sought to exert their "know-how" regarding health matters for the benefit of our schools, but until the School Health Advisory Council came into being one year ago, there was no functioning instrument of communication between doctors of medicine and educators. Since such establishment, the voice of medicine is being heard gladly by the educator. At our regular monthly meetings of the Health Council, the voice of Kansas medicine is constantly guiding and influencing the work being done. Medicine and Education are finally working together for improved health and to put real meaning into the words, "PREVENTIVE MEDICINE." The members of this Committee are proud of the accomplishments of the past three years, and particularly so of the work done this past year.

At the request of the School Health Advisory Council, this Committee prepared a brochure of *"Standing Orders for School Medical Emergency Procedures."* This brochure having been approved by the Council of the Kansas Medical Society, has been approved by the Kansas Board of Health, the Kansas Teachers Association and Kansas State Board of Public Education. It is now about to be published and distributed to all the schools of our state. Each local or county Medical Society will co-operate with the schools to see that certain teachers are certified by the medical society as being properly trained in first-aid technique.

At our last Committee meeting prior to this report Dr. Evalyn Gendel, State Board of Health, and vice-president of the Kansas Advisory School Health Council gave the Committee a preliminary report

on a state-wide immunization survey of Kansas school children in the first and sixth grades. This study authorized by the Kansas State Department of Public Instruction, points out the great deficiency in child immunization in our state. This lack, below 70 per cent, in almost every county or school reporting reveals a great danger to our school children. This Committee and the doctors of our state need to help the preventive medicine cause. Our Committee suggests the use of a uniform immunization schedule to be portrayed on a small but attractive placard, for each physician's office—as an aid to health education. We, also, feel that a letter to each school administrator from the Medical Society would help speed up the practice of preventive medicine in this field of immunization. It should be the responsibility of each doctor to alert the school administrator of his community concerning this problem.

Our School Health Committee feels that the great work still confronting us militates against merging this Committee with the Child Welfare Committee. Our work with those older than children and with the educators of our institutions of higher learning, makes us feel there is definite and continuing need of the School Health Committee.

Some of our future endeavors will be to: produce a guide for the management of athletic injuries and their prevention; co-operate in the formation of a guide concerning proper athletic equipment; help form courses at the University of Kansas for the training of teachers in health education; formulate a guide for the physical and general health conditions of teachers; help select a proper cumulative school health record for each Kansas student.

At the National Health Conference in Highland Park last October, your Committee presented resolutions to the effect that the flying tackle and football cleats should be abolished. Further, that all injured knees be seen by a physician and that corrective surgery be done to repair torn ligaments. A doctor should be present at every bodily contact athletic contest. These resolutions were considered by the new Committee on Athletic Injuries of the American Medical Association. It is our hope that we have helped start the ball rolling to reduce the tragic and unnecessary number of disabled knees presently being blamed on athletic competition.

Presently our Committee has been asked to select doctors for membership on a committee being selected by the Kansas School Health Council for the Study of Athletic Injuries and Their Prevention. This Committee of administrators, trainers, coaches, physical educators, and physicians will *together* work to correct presently existing dangers in our school athletic programs. From this Committee, the names of Drs. Gendel, Crouch and Barnes will be suggested for this participation.

Every Kansas physician is welcome to attend the next meeting of State School Health Advisory Council which will be held in the Kansas State Teachers Association Building, Topeka, Kansas on April 28, 1960. Why not come and see your "dreams come true" at this meeting. I use this quote statement for I feel certain that every Kansas physician has, at some time or other, wanted desperately to do something to improve all of our schools at all levels from a health standpoint. Furthermore, he alone has been unable to get much done in the past. The Kansas School Health Council is "The Way and the Light" for improved school health. Who knows, some of these days our graduates of institutions of higher knowledge may know something of health and hygiene that will help them to live happier lives, so they may truly multiply their talents and enrich their personalities in a way not possible by the mere learning of reading, writing and arithmetic. This family doctor yearns for this time to come to pass.

Lastly, in closing this report, I would be irrelevantly remiss if I did not express the greatest appreciation for one particular member of this Committee. Chancellor Franklin Murphy, M.D., the just recently resigned chancellor of our beloved University of Kansas, has been a member of this Committee since its formation. Busy, as he most surely has been, he has given his name to our committee membership for he has been a wholehearted "hopeful" about the school health program. If it were not for his projected wisdom in influencing, through the Department of Preventive and Postgraduate Medicine, the formation and financing of the annual School Health Symposium at the Medical Center, the new, wonderful co-operative effort of teachers and doctors in the School Health Council would never have been an accomplished and successful fact. On behalf of the doctors of Kansas, this Committee does thank you, Chancellor Murphy, M.D., for the opportunity of forming a School Health Advisory Council in Kansas.

Conrad M. Barnes, M.D., *Chairman*

State Meeting Format

F. E. Wrightman, Sabetha, Chairman; A. W. Beahm, Great Bend; W. J. Justus, Pleasanton; L. H. Leger, Kansas City; M. E. Nunemaker, Hutchinson; R. K. Purves, Wichita; R. C. Tozer, Topeka.

The State Meeting Format Committee met on two occasions. The first on Sunday, May 24, 1959, at which time broad principles were established. First of all the Committee voted that since the Reno County

Medical Society, where the 1960 meeting will be held, has already begun its preparations any recommendations made by this Committee shall not apply to that society, but shall be made to apply to meetings held in the future.

The Committee also approved and recommended to the House of Delegates the following schedule for future meetings. The 1961 Annual Session shall be held at Wichita. The 1962 Annual Session shall be held in Kansas City. The 1963 Annual Session shall be held at Topeka, if invited by the Shawnee County Medical Society.

At the time of this meeting it was determined a state-wide survey should be conducted concerning recommendations for future meetings. The survey was prepared and sent to the membership. Of 1,855 questionnaires mailed out, 607 were returned. The results were analyzed and found to contain such a divergence of recommendation that no direct single policy on any subject could be determined from the survey except as follows. It appears from the survey that the majority preferred a three-day meeting with about one out of four recommending a four-day meeting, and a very small number asking for a two-day meeting.

Concerning the days of the week preferred for the meeting the results were almost evenly divided among all seven days with the exception that Monday, Tuesday, Wednesday and Thursday were slightly preferred over the others.

As may be expected, when the meeting place was listed in order of preference, Wichita with the largest number of physicians was selected as the place of preference with Kansas City next, then Topeka, and then Hutchinson. Seven additional towns received from one to six votes. Half of the replies voted in favor of retaining the sport's day. Two-thirds of the replies wanted the continuation of the Annual Banquet. Two-thirds of the replies wanted commercial exhibits but a wide variation of opinion existed on these whereby the answer was quite difficult to evaluate. Very few of the replies expressed their desire for the familiar names. Most wanted the exhibits to be available to them for visit as desired.

There was a great variety of opinion with reference to the type of program, almost equally divided on each question that was asked.

The second meeting of the State Meeting Format Committee was held in Wichita on Sunday, October 11, 1959, at which time the following recommendations were approved. That an honorarium not to exceed $200 be allowed for each guest speaker as may be deemed necessary by the Program Committee to obtain speakers of their choice.

The local committee has already made arrangements with the Broadview Hotel of Wichita for the meeting in 1961. All meeting rooms have been reserved for this period and will be listed as assigned. The exhibit hall in the hotel has been rented. The banquet also will be held in the hotel. There will be commercial exhibits available at this meeting and the committee recommends the present rental fee of $150 be raised to $200. The Committee further recommends that scientific exhibits be presented at this meeting and that, as in the past, awards shall be given for the outstanding exhibits but that institutional type presentation will not be shown except as they are incidental to the personal exhibit of a physician or group of physicians.

The following is the format recommended by this Committee for the 1961 Annual Session to be held Monday through Wednesday, May 1-3, at the Broadview Hotel in Wichita. This has been previously approved by the Council. The local Program Committee has already engaged all speakers for that session. It is presented here for the purpose of information and for final approval by the House of Delegates.

Monday, May 1, 1961

8:00 a.m. House of Delegates breakfast in the Clan Room, first floor of the Broadview Hotel

1:00 p.m. Golf and Skeet contests. Places to be arranged by host society

3:00 p.m. Exhibit hall to be decorated

4:00 p.m. Exhibitors set up exhibits in the Ball Room, first floor of the Broadview Hotel (see notes)

7:00 p.m. Kansas Medical Golf and Skeet Shooting Association Banquet. Places to be arranged by host society.

Tuesday, May 2, 1961

8:00 a.m. Registration in the hallway of the first floor, Broadview Hotel, and viewing of exhibits in the Ball Room adjacent to registration desk

9:00 a.m. General Sessions in the Clan Room

10:00 a.m. Reference Committee continuing as long as necessary in a meeting room on the Mezzanine floor

12:00 noon General luncheon in the Ball Room

1:30 p.m. General sessions in the Clan Room

7:00 p.m. Annual Banquet—probably in the Ball Room

Wednesday, May 3, 1961

7:30 a.m. House of Delegates breakfast in the Clan Room

11:00 a.m. General Session in the Rose Room

12:30 p.m. General luncheon with a scientific program in the Ball Room

2:00 p.m. Specialty meetings in seven rooms on the first and Mezzanine floors

4:00 p.m. Exhibits dismantled

6:30 p.m. Specialty dinners scheduled as desired by the various specialty societies and at places selected by themselves

F. E. Wrightman, M.D., *Chairman*

Stormont Medical Library

B. M. Powell, II, Topeka, Chairman; J. A. Dunagin, Topeka; W. E. Hird, Wichita; N. M. Jenkins, Salina; G. A. Lessenden, Lawrence; D. S. Lowe, Hiawatha; M. C. Pearson, Concordia; M. F. Stock, Pittsburg; R. G. Weiner, Halstead; R. P. Woods, Topeka.

Once again this year as in the past the Stormont Medical Library has faced a good deal of Legislature pressure. After considerable persuasion on the part of some Kansas physicians, the Library was able to gain back some of its losses; i.e., the Medical Librarian, Mrs. Blendena Evans has been returned to full time status.

The Kansas Medical Society Committee on Stormont Medical Library met recently to see what it could do to assist the Library. The meeting was held in Topeka at the Library itself, in the State Capitol Building, in order to better acquaint members with the facilities it has to offer. This was the first visit for many, and they were very impressed with what they found. It is my feeling that if it were in this Committee's power to invite each member of the Society for such a tour, a good deal of help could be enlisted in the fight to maintain the Library.

The Committee decided at its meeting that it could best support the Library by aiding it in publicity. We felt that if we could get the facts before the Kansas doctors they would help advertise the Library by word of mouth. To accomplish this the Committee asked the Library personnel to distribute to each hospital library in Kansas and to our Society councilors a booklet concerning current listings of books, journals, and monographs that are available to the doctors through the Library. This was the first step in our publicity campaign. Moreover a bulletin of new additions to the Library will be published and distributed from time to time by the library staff's county medical society officers and all other physicians so requesting will be placed on the mailing list.

Next, we asked Mrs. Evans to prepare an article on how to use the Stormont Medical Library to the physician's best advantage for publication in the May issue of the Journal. This article will further explain some of the history of the Library and list some of the current material available there. It will be submitted to the Journal as a Committee Report. Mrs. Evans will also from time to time prepare shorter pieces of information which will appear in the Journal under the heading of *From the Stacks.*

Our final step is to help increase the material available in the Library by asking the Editorial Board of the Journal of the Kansas Medical Society to offer a second exchange copy of the Journal to the various state medical journals in hopes that they will send us a second copy of their journal. This second copy will be placed in the Stormont Medical Library.

This Committee and the Library staff itself will welcome any suggestions regarding means of improving and extending the excellent library lending services which Stormont Medical Library offers, including recommendation of worthwhile new books, etc. It should be noted that books and journals may be borrowed by mail and that postage on the library's unbound journals is considerably less than similar costs for bound volumes of journals or for materials obtained from geographically more distant sources.

May I urge each of you, Delegates, to personally make use of the Stormont Medical Library the next time you have need for some medical information. I know you will find, as I have, that the information will be sent to you rapidly and for a longer check-out time than most libraries have.

I would like again to thank my Committee members for attending our meeting in one of the worst snow storms of the season. It has been my very real pleasure to serve as their chairman for the past year.

B. M. Powell, II, M.D., *Chairman*

Study of Heart Disease

L. H. Leger, Kansas City, Chairman; D. R. Bedford, Topeka; J. W. Butin, Wichita; E. W. Crow, Wichita; E. G. Dimond, Kansas City; C. W. Erickson, Pittsburg; P. W. Morgan, Emporia; R. F. Morton, Arkansas City; G. L. Norris, Winfield; L. E. Peckenschneider, Halstead; L. F. Schmaus, Iola; H. B. Stryker, Jr., Concordia; D. C. Wakeman, Topeka; C. J. W. Wilen, Manhattan.

The Committee on Study of Heart Disease held no meetings the past year primarily because there were no specific areas which required the consideration of this committee.

Considerable discussion has taken place between Mr. Harold Hunt, Executive Director of the Kansas Heart Association and the executive office. It would seem that there will be several projects that should have the attention of this committee later this spring.

L. H. Leger, M.D., *Chairman*

Special Reports

Activities of Affiliated Groups

Blue Shield

Annually, it is the obligation and privilege of the President of Kansas Blue Shield to report to the physicians of Kansas. Such report should incorporate information relative to finances, enrollment, and activities of the organization as they affect all physicians.

Payments to physicians during 1959 amounted to $6,512,736.96, an increase of about $650,000.00 over 1958. As a result of this greater usage, plus added benefits in a few areas, Blue Shield experienced a decrease in reserves during 1959 of $208,056.94. A rather tight budget and administrative economy helped minimize this decrease. However, the end result as of December 31, 1959, was 2.81 months reserve of case and operating expense. The desired level is a three months reserve. This low reserve meant that a moderate rate increase became necessary for 1960 to maintain the organization in sound financial status.

During 1959, enrollment was increased by a net of 9,867 contracts or 23,358 members. Blue Shield membership in Kansas at December 31, 1959, was 550,733. More significantly, perhaps, because these represent more adequate and realistic coverage for the patient, 11,800 members held major medical contracts, and an estimated 67,333 members, or 12.2 per cent of the total, held plan B contracts, the "$4,500.00 income limit" program.

During the past year, there have been relatively few attempts at innovations, but an effort, rather, to expand on the foundation of existing contracts, improving coverage for the individual member or group wherever possible. It is hoped that this improved coverage may be facilitated during the coming year.

Blue Shield has offered its mechanical facilities to the Fee Committee of the Kansas Medical Society as an assistance to that group in its analysis of the Kansas fee structure. Blue Shield has cooperated fully with the Joint Study Committee on Hospital and Medical Economics, which is composed of representatives of the Kansas Medical Society, Kansas Hospital Association, Blue Cross, and Blue Shield, and has assisted in the establishment of utilization study committees in hospitals over the State. Approximately 75 such committees are now in existence.

The ceaseless informational program has continued full force. By spoken word at informal and formal gatherings, and by written word at regular intervals, a sincere effort is made to keep physicians informed of all changes and all policy decisions which may be of interest to them or their patients. An important vehicle for dissemination of information to physicians and the acquisition of physician reaction to Blue Shield programs is the Blue Shield District Relations Committee which exists in each Councilor District. Two meetings with each such Committee were held during the past year. A parallel channel for information and advice from members exists in the Member Councils, Farm Bureau, etc. Many such meetings during the past year were digested and reported to the Blue Shield Board of Trustees. Above all, emphasis is placed again and again upon the fact that Blue Shield policy is established by physicians, although in consultation with members; and policy changes of a major nature must be approved by the Kansas Medical Society through its appropriate committees and its House of Delegates.

The Lyon County Experiment terminated a year of operation on November 30, 1959. As reported to you previously, this program was designed to gather certain statistical information on the cost of care for the aged by offering many additional benefits in and out of hospital to a small segment of the 65 and older population, without additional cost to the patient and with full physician cooperation. Results are still in process of analysis, but one significant outgrowth will be reported in consideration of future planning. Of interest were the small amount of abuse of the added benefits and the total cost, which was materially less than originally estimated.

In its broadest aspects, the Blue Shield program for the year ahead has three major objectives: Economy; expansion; and increased enrollment of the aged.

No one can object to the first goal, greater economy. It is my feeling that Blue Shield has always been administered on an economical basis. This we would hope to improve still further to the end that rate increases may be avoided or minimized.

The expansion objective should include increased enrollment and broader coverage for new and old members. This increased coverage could mean a greater conversion to plan B, or addition of auxiliary benefits such as the x-ray rider or major medical coverage. These programs have been available for some time and their use has been slowly expanding. This should be accelerated. A broadened base of coverage is certainly in the best interest of the patient, and, by its more adequate and realistic payments, serves to improve physician-patient relations.

It is hoped that Blue Shield benefits can be extended to new members over age 65 in at least four

geographic areas during this next year. Partly as an outgrowth of the Lyon County Experiment, the ground-work for such programs is already being laid in Lyon and Leavenworth Counties. These four enrollment efforts would reflect the continuing interest of all physicians in the problems of care for the aged population.

Many people contribute generously of hours and days of time to maintain Blue Shield a successful non-profit prepayment plan. Particular mention should be made of the governing body, the Board of Trustees. The medical members of this group are democratically chosen, one from each Councilor District, by nomination of each District Blue Shield Relations Committee, with election by the Blue Shield Board. The President and President-elect of the Kansas Medical Society are ex-officio members. Representing the public are four members of the State Members Committee, and two appointed by the Governor. This Board has functioned efficiently and I feel that its decisions have been sound.

The Executive Committee has worked closely with an efficient Blue Shield staff throughout the year. District Relations Committees have contributed sound advice and have aided in dissemination of information. Individual physicians and groups of physicians have advised Blue Shield frequently; all opinions are appreciated. The Kansas Medical Society, through its President, Blue Shield Relations Committee, and Fee Committee has always been available for advice and opinion. Member Council representatives have worked tirelessly to inform the public and sample public opinion. Particular mention should be made of careful conscientious work by Review Committees in deciding fees for unlisted or complicated cases or procedures. To all of these groups and individuals and to many others, my most sincere gratitude.

The Blue Shield program exists primarily for the welfare of the patient. We would like to see its benefits ultimately available to all self-supporting persons, regardless of age, and on this theme I would close. It has been a privilege to serve as president of Blue Shield.

Edward J. Ryan, M.D., *President*

Prenatal Care

Since "the teenager of today is the mother of tomorrow," prenatal care for the expectant mother ideally should include preconceptional care, believes Dr. Lawrence L. Hester, Jr., of Charleston, S. C.

"Her breakfast consists of a sweet roll or cookie, with lunch being the familiar coke and crackers, and dinner never being completed because of the impending date, dance, or the ever-present telephone conversation. Thus, her nutritive stores are absent or depleted, and when pregnancy occurs during the years of late adolescence, the body must continue to fulfill the nutritional requirements of its own growth and development and, at the same time, the needs of the fetus must be met, and the maternal body prepared for milk production," he said.

For these reasons he believes dietary advice should become a part of premarital counseling for the prospective bride.

"The fact that the infant at birth is nutritionally nine months old is proof that special consideration should be given to the diet of the mother prior to and during gestation," he continued. "The preconceptional period, in which the body develops its potential for child bearing, must be considered a segment of the reproductive cycle and a period of major importance in relation to maternal and infant nutrition.

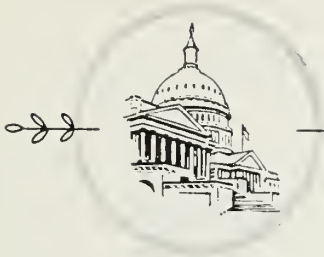
"The storage of certain nutriments by the maternal organism prior to pregnancy has been shown to be of great importance for the future health of the mother and her child," Dr. Hester said.

Good dietary advice and practice are of particular importance, since diet "is almost synonymous with prenatal care." A well balanced diet, including green vegetables, brown cereals, fruit, milk and an ample amount of lean red meat, with or without dietary supplements, "is the best means of preventing maternal complications with the delivery of a mature healthy infant."

Dr. Hester also advocates a low sodium diet for the prevention of fluid retention and preeclampsia. The patient should be instructed not to eat bacon, ham or sausage, or any highly seasoned food, to cook her food with a minimum of salt or seasoning and to add none at the table. Processed meat, cold cuts, smoked shoulder and Kosher meat contain a high sodium content and should not be eaten. Beets, celery, kale, spinach, frozen lima beans, peas and most canned vegetables should be eaten in limited amounts. Fruits are low in sodium content, however, "and can be used to one's heart's desire."

Poor Eating Habits Hit

Diet deficiencies in children "frequently arise because sugar in the form of candy, soft drinks, other confectionery foods and refined cereal products replaces the nutritionally valuable foods in the diet," reported Dr. Robert Jackson, professor and head of the department of pediatrics, University of Missouri Medical School, Columbia, at a recent Illinois Conference on Nutrition. He added: "The vicious practice of selling confectionery foods, especially in schools, to finance activities, should be discouraged." —*Illinois Medical Journal,* November, 1959.



Washington HIGHLIGHTS

This summary of Washington news is prepared by the A.M.A. Washington Office for distribution to state medical journals.

Congress Urged to Wait for Aging Conference

Congress has been warned against acting on legislation to provide health care of the aged before receiving the recommendations of next year's White House Conference on Aging.

Rep. Noah M. Mason (R., Ill.), ranking minority member of the House Ways and Means Committee which handles such legislation, put in the Congressional Record an exchange of correspondence with former Rep. Robert W. Kean (R., N. J.), Chairman of the National Advisory Committee supervising preparations for the White House Conference next January.

Rep. Mason said the correspondence "reveals the reason why Congress should await the results of the Conference."

"Let us not waste the $2 million we have already appropriated to bring thousands of good minds together to suggest solutions to problems of our aging population," Rep. Mason said. "Certainly we should get the benefit of their advice rather than enact legislation in haste and without proper study."

Dr. F. J. L. Blasingame, Executive Vice President of the American Medical Association, also voiced this warning in a radio interview while he was in Washington for conferences with White House aides and Arthur S. Flemming, Secretary of Health, Education and Welfare.

Blasingame's Message

Dr. Blasingame said that it would be "neither practical nor realistic" for Congress to act on such legislation until the White House Conference and other sources had compiled "more conclusive and complete information" on a nationwide basis.

Dr. Blasingame and other A.M.A. representatives emphasized to President Eisenhower's aides and Flemming that the medical profession is unalterably opposed to any legislation, such as the Forand bill, that would use the Social Security system to provide health care for the aged.

In his letter to Mason, Kean predicted that "in all probability" most of the White House Conference's recommendations would be for "state and local activity" in dealing with the problems of the aged. Kean said that action at the state and local level "seems most effective."

The National Association of Manufacturers charged in a pamphlet that supporters of Forand-type legislation have exaggerated the health care needs of the nation's older people. The NAM pamphlet also said the Forand bill was an entering wedge for a cradle-to-grave compulsory health insurance plan.

Meantime, supporters of the Forand bill—particularly the AFL-CIO, continued an intensive pressure campaign aimed at Congressional approval of the legislation in this national election year when Congressmen are more susceptible to such pressure.

Another Democratic presidential hopeful, Sen. Hubert H. Humphrey (D., Minn.), reiterated his support for Forand-type legislation. He proposed a six-point program for aid for the elderly, including "an extension of the Social Security system to cover the cost of hospital and nursing home care for senior citizens."

Sen. John F. Kennedy (D., Mass.), a leading contender for the Democratic nomination for President, has introduced similar, but even broader, legislation.

Self-Employed Tax Break Looks Favorable

Elsewhere on the national legislative front, prospects brightened for Congressional passage this year of a bill to permit physicians and other self-employed persons to set aside money for retirement.

The Administration, which last year opposed a bill with such provisions, appeared in mid-March to be ready to support it with modifications.

The Administration shift improved the already favorable odds that both the Senate Finance Committee, where a House-approved bill was pending, and the Senate would approve such legislation this session.

A Drug by Any Other Name . . .

The issue of generic names vs. trade names in doctor's prescriptions came to the forefront in the

Senate Monopoly Subcommittee's investigation of the drug industry.

Dr. Austin Smith, President of the Pharmaceutical Manufacturers Association, testified at a Subcommittee hearing that "behind brand names lie the reputation, reliability, and skill of the manufacturer." He said use of generic terms would restrict a physician's choice as to drugs and would transfer some of the physician's responsibility to the pharmacist.

"By brand name prescription, the doctor orders for a patient a specific product in which he has absolute knowledge of quality, purity and any side effects that might have importance for a particular patient," Dr. Smith said.

Dr. R. B. Robins of Camden, Ark., who accompanied Smith at the hearing, submitted a similar statement. He said he used trade names because: "It is simpler to write such a prescription and I can be assured that no substitution will be made by the druggist—this assures me that the patient will get top quality."

Dr. Robins appeared before the Subcommittee as a private practicing physician and not in his capacity as a member of the A.M.A. Board of Trustees.

Despite this testimony, Sen. Estes Kefauver (D., Tenn.), the Chairman of the Subcommittee, said he hoped physicians would give "serious thought" to use of generic terms. He contended that doctors thus could bring down drug prices by opening the way for small manufacturers to give the major companies "some good, honest, old-fashioned price competition."

Occupational Safety Conference

President Eisenhower's Conference on Occupational Safety urged stronger x-ray legislation by the states with an aim of protecting consumers and workers against too much radiation.

The three day Conference also said there is need "for effective educational programs to reduce both consumer and occupational exposures to x-rays used for diagnosis and therapy, x-ray installations in industry for product control and related purposes and various x-ray devices, such as shoe-fitting fluoroscopes."

The Conference also recommended intensive efforts to develop better ways of determining safe exposure levels of radiation.

Industrial Women's Illnesses

Women, more and more, may be entering the man's world, but they remain the weaker sex—at least, in terms of their work record in industry. Evidence for this fact is revealed in the current issue of *Patterns of Disease*, prepared by Parke, Davis & Company for the medical profession.

More women in industry are posing "new health problems," particularly in terms of absenteeism, the publication reveals.

It points out that the number of women employed has increased by 50 per cent during the past 10 years, to the point where they now comprise one-third of our working force. Of the 22,000,000 women workers, about 9,000,000 are married while 1,000,000 or more are heads of families with no employed relatives. The median age of women workers increased by more than six years between 1946 and 1956, in contrast to an increase of less than two years in the median age of working men.

The problem of absenteeism among women workers has been under investigation. In one company women constituted only slightly more than 25 per cent of the working force, yet were responsible for 49 per cent of disability cases, 63 per cent of weeks lost from work, and 95 per cent of excess lost time cases. "Most excessive absenteeism was among married women 50 to 20 years old and season of greatest absenteeism was summer—when children were on vacation from school!"

However, although the increase of women in industry has created new problems, it has opened up new opportunities "for improvement of health, their own and that of their families." For example, one company now provides mass screening techniques for the detection of uterine cancer.

We cannot import systems of education or copy the standards and aims of other nations. We grow stronger by meeting our own indigenous needs in our own indigenous ways, by surpassing ourselves rather than trying to surpass some other nation . . . the quality of our education depends upon the belief of the American people in education, upon their enthusiastic and unshakable conviction that no social activity is more important to us.—*James R. Killian, Jr.*

The ideas of fair play and self-restraint are essentially religious. They help keep dog-eat-dog practices in check and enable the business system to operate without strict governmental control; self-restraint rather than legal restraint is the rule. The typical emphasis on individual responsibility is another example of a basically religious idea which permeates American life, including business life.—*James C. Worthy*

Wise is the executive who can eliminate "ought" from his thinking about staff performance . . . unusually wise, the one who takes extra time and trouble to get a staff to "want" to do something.

—*Norman G. Shidle*

Blue Shield

Thirty Per Cent of Kansas

Today more than 30 per cent of all residents of the state are members of Kansas Blue Cross-Blue Shield. This announcement is made by Dr. Edward J. Ryan, Emporia, President of Blue Shield, and Herman J. Andres, Newton, Blue Cross President, with the issuing of annual report figures for the year 1959.

At the end of the year, both Blue Cross and Blue Shield showed a large increase in membership over the state. Today, Blue Cross membership totals 594,-349, an increase for the year of 17,502 and Blue Shield gained 23,358 members, bringing its total to 550,733.

Operating Costs Continue Low

Combined operating expense for the two Plans decreased even further than in past years, and today only 7.6 per cent of total income is necessary to operate the Plans. In other words, less than eight cents of a member's Blue Cross-Blue Shield dues dollar is spent to operate the Plans.

Millions of Dollars for Care

Over 1½ million dollars a month was paid by Kansas Blue Cross-Blue Shield last year for the hospital, medical, and surgical care of Kansas members.

A total of $20,570,163.15 was paid by the Plans last year for members' care. "This makes our average monthly payment for care $1,714,180.26," the Plan Presidents pointed out.

Kansas Blue Cross was organized in 1942, and Blue Shield in 1946, and each year since their establishment, as membership grew, these health Plans have increased their payments for care.

Since their beginning, Blue Cross and Blue Shield have paid a total of $125,577,979 for the hospital, medical, and surgical care of Kansas members.

Any Kansas Resident Eligible for Plan

Any resident of Kansas is now eligible to apply for membership in Kansas Blue Cross-Blue Shield in either the group or non-group category.

Today, regardless of the size of the business firm where a person may be employed, and whether or not that firm has a Blue Cross-Blue Shield group, the individual may apply for membership. If the firm *does* have a Blue Cross-Blue Shield group, the employee should join through that group, because the benefits are higher and the dues are usually less.

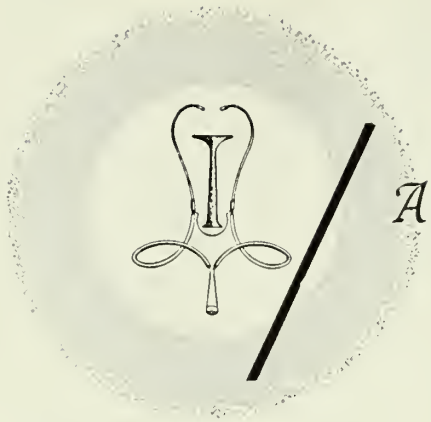
However, if there is not a Blue Cross-Blue Shield group at the place of employment, the individual can apply for membership on a non-group basis. In other words, today all Kansans are eligible to apply for membership in Kansas Blue Cross-Blue Shield *if they are under age 60.*

Non-Group Enrollment

Considerable emphasis is being placed this year on state-wide non-group enrollment. In some areas later in the year there will be special non-group representatives to explain the benefits to individuals.

In the city of Wichita, for example, for ten days this month, a special effort is going to be made to inform every resident of the availability of the two health Plans. In many instances throughout Kansas, especially in the larger cities, it has been impossible for some people to enroll in Blue Cross-Blue Shield because they were employed in large industries that do not have a Blue Cross-Blue Shield group. Now, those individuals may enroll themselves and their families in a non-group membership.

Every effort will be made throughout the year to inform Kansans of the availability of Kansas Blue Cross-Blue Shield as group or non-group members.



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the DOCTOR'S CALENDAR. *Notice of the session is posted in advance to allow the physician time to make preparations.*

American College of Surgeons 46th Annual Clinical Congress will be held October 10-14, 1960, in San Francisco, California. For information write: Dr. William E. Adams, Secretary, American College of Surgeons, 40 East Erie Street, Chicago 11, Illinois.

Two Short or Refresher Courses will be given in early June 1960, by the Children's Hospital of Philadelphia and the Graduate School of Medicine, University of Pennsylvania.

1. PEDIATRIC ADVANCES. May 30 through June 3, 1960.

Conducted by the Staff of The Children's Hospital of Philadelphia. The curriculum will consist of clinics, demonstrations and panel discussions in selected aspects of contemporary pediatrics in which important advances are being made. NOTE: Interested physicians are urged to apply early, since total attendance is limited. Registration fee will be refunded if the registrant later finds it impossible to attend. TUITION: $115.00.

2. PRACTICAL PEDIATRIC HEMATOLOGY. June 6 through 10, 1960.

Conducted by Irving J. Wolman, M.D., Thomas R. Boggs, Jr., M.D. and other members of the Hematology Department of the Children's Hospital of Philadelphia. TUITION: $125.00.

The program on the last 2 days will be devoted to Problems of Blood Grouping, Neonatal Jaundice, Kernicterus and Exchange Transfusion. Physicians may register for these 2 days only; if desired: TUITION: $50.00.

An illustrative collection of 25 abnormal blood and bone marrow slides has been prepared. These are available for purchase: $10.00 for registrants; $15.00 for non-registrants.

Inquiries should be addressed to Irving J. Wolman, M.D., Director of Post-Graduate Education, The Children's Hospital of Philadelphia, 1740 Bainbridge Street, Philadelphia 46, Pa.

NEWS ITEM

Dr. J. H. McCurry, of Cash, Ark. advises that he has the approval of the American Medical Association to organize a Fifty Year Club within the A.M.A. Dr. McCurry is anxious to hear from physicians who have been in practice fifty years or more who desire to become members of this club, giving their name and a complete address.

The first meeting is to be held in Washington, D. C. at the Clinical Meeting November 29 to December 2, 1960.

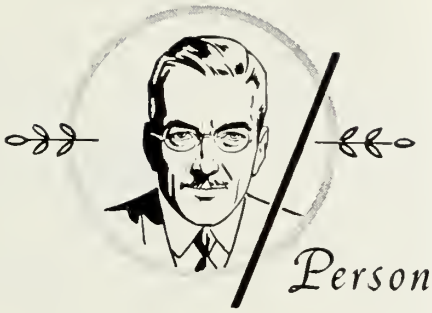
The Thompson, Brumm & Knepper Clinic announced the eleventh annual Dr. F. G. Thompson, Sr., Memorial Lecture to be given on Thursday evening, May 19, 1960 at 8:15 in the Clinic Building, 902 Edmond Street, St. Joseph, Missouri.

The speaker will be Dr. L. F. Jourdonais, Associate Professor of Medicine at Northwestern University School of Medicine, and Chairman of the Department of Medicine at the Evanston General Hospital, Evanston, Ill.

The subject will be: "Chronic Ulcerative Colitis: An Enigma."

The Section of Ophthalmology and Otolaryngology of the Southern Medical Association announces that they are now accepting papers by physicians of either specialty living in the area of the Southern Medical Association for consideration for presentation at the next annual meeting to be held in St. Louis, Missouri from October 31 to November 3, 1960.

The paper or an abstract of the paper may be sent directly to the Secretary, Dr. Albert C. Esposito.



Personalities—IN KANSAS MEDICINE

Dr. Joseph A. Budetti presented a paper entitled "The Medical Aspects of Voice Disorders" and was featured along with Dr. Paul Moore, Ph.D. of Northwestern University as a panel member in the general discussion at the two day interstate conference of speech therapists, sponsored by Sigma Alpha Eta Chapter at the Institute of Logopedics on 5 and 6.

The Russell County commissioners recently appointed **Dr. C. M. Dunshee,** a Russell physician, to be the county health officer for 1960. He succeeds **Dr. Millard Schultz,** who has held the position for the last two years.

Dr. V. R. Moorman, Hutchinson, has been elected president of the Reno County County Medical Society. He succeeds **Dr. E. L. Fitzgerald,** who just completed a year's term of office.

Other new officers are **Drs. Jack Perkins,** vice-president; **Tom W. Stivers,** secretary; and **Jack C. Schroll,** treasurer. All are of Hutchinson.

Dr. Charles H. Miller, Parsons, showed some films on teaching to The Labette County Medical Society when it held its monthly dinner meeting at the Parsonian Hotel.

Dr. Ralph Reed, City-County health director for the past year, has resigned that post effective May 1. A successor has not been named as yet.

Dr. Reed has been working as health director on a part-time basis. He replaced Dr. C. A. McIntyre, who resigned because of ill health.

Dr. Reed said it was necessary for him to resign the part-time job because of his practice.

Dr. William L. Warriner, Topeka, has recently retired from the practice of Medicine.

On his next birthday, September 28, the doctor will be 98, and in June it will have been 72 years since he left Northwestern University Medical College with an M.D. degree and started practicing in Kansas.

In 1901 Dr. Warriner and 14 other doctors organized the Shawnee County Medical Society. He is the only charter member surviving.

The doctor's babies are coming back to honor the man who spanked life into them. Although he doesn't recall the exact number, the Lewis physician thinks he's brought at least 1,000 people into the world during his 57 years' service to Kansas medicine.

The man in question, **Dr. F. G. Meckfessel's** deeds have been remembered by people all over Central Kansas who recently gathered to pay homage to him with a special celebration.

Dr. Norman G. Marvin, Medicine Lodge, announced that he will move to Kiowa where he will be associated with **Drs. M. D. Christensen** and **L. S. Patzkowsky.**

Dr. Marvin is presently associated with **Dr. J. D. Hilliard.**

Highlight of the recent meeting of the Barton County Medical Assistants Society was an illustrated talk by **Dr. Robert Polson,** Great Bend, on his recent trip to the Pan-American Association of Ophthalmology in Caracus, Venezuela. Dr. Polson showed the group colored slides of his trip.

Dr. Y. E. Parkhurst, Hoxie, will leave next week for New Orleans where Dr. Parkhurst will attend the 23rd annual meeting of the New Orleans Graduate Medical Assembly. This will be the eighth year Dr. Parkhurst has attended the annual training session.

The course is set up especially for general practitioners. Some of the top medical men of the nation are lecturers at the session to discuss the latest developments in their fields for the benefit of physicians attending the assembly.

"Living in Jordan is like being between two millstones," says **Dr. John B. Jarrott,** Hutchinson, of the Jewish-Arab situation which he saw at first hand in Jordan and recently told the *Hutchinson News.*

"The Zions aren't going to move out, and the Arabs are not moving in. It's pathetic—as many as 50,000 Arab refugees in one camp, and at least 49,999 of them not interested in re-settling—they're waiting to go home to Israel."

"Communists and Jews are two things that are not welcome in the country."

Dr. Jarrott, Hutchinson Orthopedic surgeon, and his family were in Jordan to assist with the Orthopedic Letters Club Overseas project, a hands-across-the-sea benefit born a year ago at the annual cabin conference of the Club.

Drs. Richard Tozer and **Robert P. Woods,** Topeka, recently attended a meeting of the Interurban Neurological Society in Chicago and **Dr. Edward Greenwood,** Topeka, attended two post-conference executive committee meetings for the 1960 White House Conference on Children and Youth in Washington, D. C.

Dr. J. Cotter Hirschberg, Topeka, attended the American Association of Psychiatric Clinics for Children and American Academy of Child Psychiatry meetings in Chicago.

On March 4 **Dr. Bernard Hall** and **Dr. Robert B. Forman,** Topeka, read a paper on Contraindications to the Prescription of Ataractic Drugs to the Kansas Regional Meeting of the American College of Physicians in Kansas City, Kansas.

Dr. Hall recently presented the first guest lecture for the chapter of Phi Beta Phi Medical Fraternity at the University of Utah College of Medicine in Salt Lake City. His lecture was entitled "The Mental Health of the Senior Citizen."

The present-day preoccupation with new forms in art and literature betrays a poverty of contents. Whenever the artist or writer has something to express that is compelling, it naturally assumes the appropriate form without much deliberation.

—*Bernard Berenson*

NEW MEMBERS

The JOURNAL *takes this opportunity to welcome these new members into the Kansas Medical Society.*

Hal A. Burnett, M.D.
1608 Linwood Drive
Parsons, Kansas

Craig N. Clark, M.D.
102 E. Sixth
Junction City, Kansas

Milton A. Classen, M.D.
201 South Pine
Newton, Kansas

William C. Cooper, M.D.
Snyder Clinic
Winfield, Kansas

Asher W. Dahl, M.D.
Colby Clinic
Colby, Kansas

John W. Durkin, Jr., M.D.
1200 Fremont
Manhattan, Kansas

Thomas H. Fender, Jr., M.D.
3101 E. Ninth
Wichita 14, Kansas

Wayne D. Hird, M.D.
2310 E. Central
Wichita 14, Kansas

Raymond F. Holden, Jr., M.D.
2110 E. Douglas
Wichita 14, Kansas

Harmon M. Holladay, M.D.
527 N. Hillside
Wichita 14, Kansas

John R. Johnson, M.D.
222 East Kansas
McPherson, Kansas

R. Rex Lee, M.D.
6155 E. Harry
Wichita 18, Kansas

Clifton C. Schopf, M.D.
136 Gorin
Clearwater, Kansas

Marvin Snowbarger, M.D.
8th & Mechanic
Emporia, Kansas

Jerald L. Starkey, M.D.
121 W. Lincoln
Lindsborg, Kansas

Carl K. Zacharias, M.D.
Dodge City Medical Center
Dodge City, Kansas

Calvin J. Zerwick, M.D.
A.C. Office Building
Arkansas City, Kansas

One cannot love all men equally. We choose, and we ought to choose the objects of our love. Love, humanity, must be positive. People often take the hatred of another nation to be the love of one's own. It is far higher to feel no hatred but to love positively.—*Thomas G. Masaryk*

Few can be induced to labor exclusively for posterity; and none will do it enthusiastically. Posterity has done nothing for us; and, theorize on it as we may, practically we should do very little for it, unless we are made to think we are at the same time doing something for ourselves.—*Abraham Lincoln*

The most important thing I have learned as a judge is that the heart and soul of America are sound and true and that the intuitive judgment of the ordinary man in the street is in the aggregate something infinitely penetrating and reliable.

—*Judge Harold R. Medina*

A load of cares lies like a weight of guilt upon the mind: so that a man of business often has all the air, the distraction and restlessness and hurry of feeling of a criminal.—*William Hazlitt*

Book REVIEWS

ATLAS OF ROENTGENOGRAPHIC POSITIONS, VOLUMES I AND II, SECOND EDITION. Written and compiled by Vinita Merrill, while Educational Director, Picker X-ray Corporation, cloth, 664 pages, numerous illustrations. St. Louis, the C. V. Mosby Company, 1959. $32.50.

These volumes have successfully served their purpose, as set forth by the author in the preface to the first edition, by providing a reference book on positioning for other technicians. Mr. Merrill has accomplished, in a memorable fashion, the task of describing positions used routinely, and the unusual and specialized positions which may be useful in certain circumstances. The first and second editions have minor differences. The few new positions that have been added to the new compilation, as well as some older ones not included in the first edition, seem to make little difference in the over-all presentation of this edition. Several new illustrations have been added, and some older ones replaced. A few sections have been rewritten.

Each anatomic part is considered separately. Volume I is concerned primarily with the skeletal system, and has a useful glossary at the end. Volume II is concerned primarily with the skull, and various systems, and the use of contrast agents. Each section is preceded by a brief but adequate description of anatomy. Elementary physiology is reviewed when indicated. This is followed by an exact description of positioning, accompanied by photographs of the relationship of the tube, and part to be radiographed, and the resulting roentgenogram for each position. Line drawings of the tube-anatomical part relationship are used advantageously to simplify instructions. The use of "gimmicks" is minimized.

There is some redundancy in the presentation of positions for various anatomical parts, but Mr. Merrill leaves the choice to the technician for the merit of the position under varying circumstances. The author's usual thoroughness falls short in his description of the cerebral pneumography and cerebral angiography. The newer bibliographies relating to these subjects are lacking.

The glossary at the end of the first volume should prove useful to the technician. The bibliography is mostly excellent and generous, and fits well these reference volumes. The index is adequate both for anatomical part and proper names associated with various positions.

This valuable addition on radiographic positioning should find usefulness in the library of the x-ray technician, the radiologist, and any physician who does more than the occasional radiograph.—*R. C. L.*

SYNOPSIS OF OPHTHALMOLOGY, William H. Haidner, B.A., M.D., C. V. Mosby Co., St. Louis, 1959, 288 pages, $6.75. Illustrated.

This remarkable little handbook of Ophthalmology, replete with abundant black and white illustration, offers unique service to clinicians because of its broad scope and unusual brevity. In 288 pages, succinct treatment of nearly all phases of ophthalmology including the examination of the eye, neuro-ophthalmology, development anomalies, physiology of the eye and even a philosophic discussion that "blindness is preventable" are treated extremely well. This publication merits the perusal and use by opthalmologists particularly, but will be of unusual value to general practitioners, internists, and neurologists, etc.—*J. A. S.*

BOOKS RECEIVED

Books received by the Journal of the Kansas Medical Society *are acknowledged in this column. Selections will be made for more extensive review in the interests of readers as space permits. Members of the Society, from time to time, review these books and their critique is presented in this section. The reviewers receive the complimentary book from the publisher for their efforts.*

THE RELUCTANT SURGEON: A Biography of John Hunter, John Kobler, Doubleday and Co., New York, 1960, 359 pages, $4.95.

PSYCHIATRY: Descriptive and Dynamic, Jackson A. Smith, M.D., The Williams and Wilkins Co., Baltimore, 1960, 342 pages, $7.00.

The Kansas Medical Society—1959-1960

OFFICERS

President	Glenn R. Peters, Kansas City
President-Elect	Frederick E. Wrightman, Sabetha
Immediate Past President	Thomas P. Butcher, Emporia
First Vice-President	Harold M. Glover, Newton
Second Vice-President	Norton L. Francis, Wichita
Secretary	George E. Burket, Jr., Kingman
Treasurer	John L. Lattimore, Topeka
A.M.A. Delegate, 1958-1959	George F. Gsell, Wichita
A.M.A. Alternate, 1958-1959	Cyril V. Black, Pratt
A.M.A. Delegate, 1959-1960	Lucien R. Pyle, Topeka
A.M.A. Alternate, 1959-1960	Norton L. Francis, Wichita
Chairman of Editorial Board	Orville R. Clark, Topeka

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District 2	J. W. Manley, Kansas City
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District 4	Dick B. McKee, Pittsburg
District 5	Ralph G. Ball, Manhattan
District 6	James A. McClure, Topeka
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District 10	John N. Blank, Hutchinson
District 11	William J. Reals, Wichita
District 12	Albert C. Hatcher, Wellington
District 13	Henry S. O'Donnell, Ellsworth
District 14	Clair J. Cavanaugh, Great Bend
District 15	Lyle G. Glenn, Protection
District 16	Edward F. Steichen, Lenora
District 17	H. Preston Palmer, Scott City

OFFICERS OF COMPONENT SOCIETIES—1960

Society	*President*	*Secretary*
Allen	Lyle F. Schmaus, Iola	L. D. Robinson, Iola
Anderson	T. M. Dougherty, Garnett	Claib B. Harris, Jr., Garnett
Atchison	Edwin T. Wulff, Atchison	L. E. Harrington, Atchison
Barton	Anol Beahm, Great Bend	Robert Unrein, Hoisington
Bourbon	Pratt Irby, Fort Scott	Guy I. Akers, Fort Scott
Brown	James Scanlon, Horton	R. T. Nichols, Hiawatha
Butler	Ray F. Lowry, El Dorado	Kenneth B. Dellett, El Dorado
Central Kansas	Joseph Seitz, Ellsworth	Barbara J. Calderwood, Hays
Chase		Jacob Hinden, Strong City
Chautauqua	Ivan E. Lloyd, Sedan	William K. Walker, Sedan
Cherokee	F. H. Jones, Columbus	H. L. Bogan, Baxter Springs
Clay	S. A. Anderson, Clay Center	Forrest D. Taylor, Clay Center
Cloud	M. C. Pearson, Concordia	F. P. Thornton, Jr., Concordia
Coffey	A. B. McConnell, Burlington	Joseph W. Parker, Jr., Burlington
Cowley	G. L. Norris, Winfield	Edgar D. Hinshaw, Arkansas City
Crawford	R. W. Friggeri, Girard	Howard R. Elliott, Pittsburg
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Marshall	J. W. Randell, Marysville	D. M. Diefendorf, Waterville
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Northwest Kansas	Floyd L. Smith, Colby	Wayne G. Parker, Hoxie
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Osborne	W. W. Miller, Osborne	J. E. Henshall, Osborne
Pawnee	O. R. Cram, Larned	H. L. Patterson, Larned
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Scientific
ARTICLES

Bilateral Internal Iliac Artery Occlusion

May Result in Serious Complications

ALFRED M. TOCKER, M.D.; ROBERT A. EASTWOOD, M.D.;
and A. J. WRAY, M.D., *Wichita*

Bilateral ligation of the internal iliac arteries is often performed with impunity in vascular, general surgical and gynecological operations. Cases are presented illustrating the calculated risks and serious complications which may result from occlusion of these vessels, especially in the presence of diseases with generalized involvement of the arteries.

With the availability of prosthetic blood vessel grafts and the development of surgical technics within recent years, by-pass and replacement vascular surgery and thrombointimectomy operations have become acceptable and even commonplace in all major hospitals. This is particularly important in cases in which the time factor is of utmost importance—such as ruptured abdominal aneurysms, arterial emboli, etc. Operations in the localities in which such catastrophes occur offer obvious advantages over transfer of the patient to distant medical centers.

While by-pass procedures and thrombointimectomies (the latter being preferable) have become the more acceptable operations in obliterative arterial disease, replacement of the involved area with one of the readily available prosthetic grafts is the accepted procedure for aneurysms. The most commonly performed operation of graft replacement of diseased segments is that performed for abdominal aortic aneurysms. More often than not, such aneurysms extend beyond the bifurcation of the aorta, frequently involving the branches of the common iliac arteries bilaterally. Replacement of the involved abdominal aorta and its branches with a prosthetic graft is the procedure of choice. Usually one or both internal iliac arteries are ligated with impunity with no significant complications. Such bilateral ligations are commonly used in gynecological operations, and have been recommended in abdominoperineal resection for cancer of the rectum.

However, we are convinced that bilateral ligation of the internal iliac arteries is not completely harmless and does carry a calculated risk and may result in serious complications in a small number of cases.

Review of Literature

Tajes attributed delayed necrosis of the buttocks to bilateral ligation of the hypogastric arteries performed in a case of anorectal cancer treated by combined abdominoperineal resection of the rectum, and a review

From the Departments of Surgery of the Veterans Administration and St. Francis Hospitals, Wichita, Kansas.

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of the literature by him at that time (1955) revealed only two additional cases to have been reported. We have been unable to find any further reports in the literature on this subject since that time. However, John L. Madden in his book *Atlas of Technics in Surgery* recommends anastomosis of the internal iliac arteries, if patent, to the prosthetic graft in cases of excision of aneurysms of the abdominal aorta in which transection is performed distal to the common iliac arteries, stating that in one patient in whom ligation rather than anastomosis of the internal iliac arteries was done, two large areas of tissue necrosis occurred deep within the buttocks with secondary skin necrosis. He further warned that in some patients compromise of the blood supply to a segment of the colon may result from failure to anastomose the graft with the internal iliac arteries. Bacon states that he ligates the internal iliac artery beneath its superior gluteal branch without complications.

Kornfield and Jacobson recently reported a case of acute ureteral block with the clinical picture of acute pyelonephritis due to obstruction by the right common iliac artery involvement in a dumbbell-shaped aortic aneurysm operated upon by one of us (AMT) at the Veterans Administration Hospital in Wichita, Kansas. Both internal iliac arteries were ligated due to the tubular aneurysmal dilatation involving these vessels without obstruction of the lumens. The aneurysm was resected and replaced by an Edwards-Tapp type bifurcation graft extending from the aorta below the renal vessels to the external iliac vessels bilaterally. This patient experienced urinary incontinence of a moderate degree which improved over a period of weeks to satisfactory urinary control. We postulate that this improvement resulted from the development of collateral circulation to the pelvic area formerly supplied by the ligated internal iliac vessels. In a somewhat similar sense, *Case No. 1,* previously reported in the literature, illustrates complete relief of severe urinary incontinence by re-establishment of blood flow through the internal iliac arteries obliterated in the occlusive pathology of Leriche syndrome.

Anatomy

In Gray's anatomy book, the branches of the internal iliac artery are listed as follows:

ANTERIOR BRANCHES	POSTERIOR BRANCHES
Superior Vesical	Iliolumbar
Middle Vesical	Lateral Sacral
Inferior Vesical	Superior Gluteal
Middle Hemorrhoidal	
Obturator	
Internal Pudental	
Inferior Gluteal	
Uterine } In the Female	
Vaginal } In the Female	

With reference to the collateral circulation of this vessel, this same anatomy book states: "The circulation after ligature of the internal iliac artery is carried on by the anastomoses of the uterine and ovarian arteries; of the vesical arteries of the two sides; of the hemorrhoidal branches of the internal iliac with those from the inferior mesenteric; of the obturator artery, by means of its pubic branch, with the vessel of the opposite side, and with the inferior epigastric and medial femoral circumflex; of the circumflex and perforating branches of the profunda femoris with the inferior gluteal; of the superior gluteal with the posterior branches of the lateral sacral arteries; of the iliolumbar with the last lumbar; of the lateral sacral with the middle sacral; and of the iliac circumflex with the iliolumbar and superior gluteal."

From a theoretical standpoint, collateral circulation following bilateral internal iliac artery ligation appears to be adequate. However, a number of authors have reported instances in which circulation has not been adequate and necrosis due to ischemia has resulted, with serious or even fatal results. This is more likely to occur if the vessels involved in the collateral circulation are themselves affected by the disease process, such as in generalized obliterative vascular disease.

Case Reports

The following two cases illustrate complications which may result from occlusion of the internal iliac arteries.

Case 1. Mrs. F. J., a 44-year-old white woman, presented herself with the chief complaints of hip pains, cramps, and weakness of the lower extremities, and urinary incontinence. About five years previously she had first noted cramping and fatigue of her lower extremities on exercise, relieved by rest, which symptoms had progressively become worse. Pains developed in her back, hips and pelvis. Her legs felt cold and numb. Urinary incontinence, which developed in 1952, had been progressive. She wore a pad at all times, which was always wet with urine. When she would get up from a lying or sitting position, urine would "gush" from her. She seldom had any urine to pass voluntarily.

All previous therapy, medical and surgical, had been ineffective. Bilateral lumbar sympathectomy with removal of the second and third lumbar ganglia on both sides had been performed in April, 1953, and the operator at that time had palpated the aorta, which he described as a hard, rigid tube. X-rays at that time had revealed calcification of the aortic arch and extensive calcification of the abdominal aorta and its bifurcation.

She was treated for the urinary incontinence without benefit by a competent urologist by repeated peri-

odic dilatations. In December 1954 surgical repair of a cystocele and plication of the urethra had resulted in immediate control of the incontinence, but within a period of two weeks this condition had returned to its pre-operative status.

No pulsations could be elicited on palpation of the abdominal aorta, or femoral, popliteal, posterior tibial or dorsalis pedis arteries. Blood pressure, 160/75 in both arms, was absent in the lower extremities. There was a meager amount of hair on the legs. Her legs were comparatively cold to the touch. She had global atrophy of both legs, more on the left. Her walk was a slow, cautious gait, and she was able to walk only a measured 40 feet before having to stop because of leg cramps. After a short rest, she was able to continue again. Because her right leg was less involved than her left, she was able to walk half a block by using crutches before developing hip pains and leg cramps.

Translumbar aortogram with 25 per cent diodrast revealed occlusion of the aorta below the renal vessels. The vessels of the legs appeared to be patent.

On June 7, 1955, operation was performed by one of us (AMT). A hard, calcified, pulseless abdominal aorta and its bifurcation were exposed and resected from just below the superior mesenteric artery to the bifurcation of both common iliacs into the external and internal iliac arteries. The shrunken resected arteriosclerotic vessels were completely occluded by the calcified, thrombosed, and gelatinous-like contents within the lumen, which extended superiorly and inferiorly on both sides beyond the limits of the resection. The extent of the resection was limited by the length of the one lyophilized homograft of the aorta and its bifurcation which we had on hand. (Prosthetic grafts were not available to us at the time of this operation.) No free bleeding was obtained from the open end of the aorta superiorly or from either open vessel inferiorly until the plugs within these lumens were removed by thrombo-endartectomies. Following this there appeared to be no obstruction from the aorta above or from the endarterectomized right internal and external iliac arteries. The blood flow from the endarterectomized left internal and external iliac arteries was somewhat less satisfactory. The lyophilized aortic homograft and bifurcation was sutured into place.

Her postoperative course was essentially uncomplicated. *Urinary incontinence, which had existed for three years before operation, was no longer present.* Her hip pains and numbness and coldness of her lower extremities disappeared. All pulses of the right leg were strong, with a blood pressure of 150/100, while those of the left were faintly palpable with a blood pressure of 110/94. Intermittent claudication, which previously even awakened her from sleep, was only occasionally present in a mild form in her left lower extremity after exercise. She no longer had the preoperative fatigue of her right leg, and that of her left was definitely less. The numbness and coldness of her legs were no longer present. Pains and cramps in her back, hips, pelvis and legs disappeared, except for milder pains of her left hip and leg. There was growth of hair on her legs. Libido was definitely increased. (Preoperatively she had practically abstained from sexual relations for approximately two years.) She was able to walk up to three blocks (as compared to 40 feet preoperatively) before left hip and leg cramps developed, but these were less severe than preoperatively and required only a short rest period for relief. Although the excellent condition of her right leg now permitted her to walk an indefinite distance with the crutches she used preoperatively, she no longer used crutches, even when going shopping. Four years after operation, symptoms in her left leg have increased, but her right leg remains satisfactory and she continues to have excellent urinary control.

Comment: This case report is presented primarily because the patient's severe urinary incontinence (which over a period of years had failed to respond to all other treatments, including repair of a cystocele and plication of the urethra) was immediately, dramatically and practically completely cured following resection of the occluded portion of the abdominal aorta and its bifurcation and replacement with a lyophilized homograft. This was undoubtedly due to the increased blood supply to the pelvic region, not only through the thrombointimectomized internal iliac arteries, but also through the collateral vessels benefiting from the increased blood flow to the vessels of the lower extermities.

Inability of the male to keep a stable erection and impotency—symptoms commonly seen in the more numerous male patients with Leriche syndrome—and the improvement in these symptoms following aortic grafting may be explained on the same basis. It is noted that our patient's libido was improved by operation.

It is accepted generally that a thrombosed vessel is no longer a part of the arterial system, and with occlusion becomes a carrier of vaso-constriction impulses, and also originates reflex arteriospasm. These effects extend not only to the vessels of the extremities, but to the vessels of the pelvis and to all organs supplied by these vessels.

In this generalized obliterative disease of the blood vessels, the entire vascular tree, *including the collateral vessels,* is involved. The blood supply is diminished to a critical level, and occlusion of the internal iliac arteries results in inadequate vascularity with resulting complications due to ischemia.

Urinary incontinence appearing after operation

such as in the second case reported by Kornfield and Jacobson is usually attributed to involvement of the neurological elements. However, in the case reported above, disappearance of urinary incontinence of three years duration after re-establishment of the blood flow of the obliterated internal iliac arteries suggests strongly that an inadequate blood supply is the important factor here.

Case 2. Approximately three months prior to his admission for resection and graft replacement of an unusually large aneurysm of the abdominal aorta and bifurcation, J. M. H., a 68-year-old white male, had had an exploratory laparotomy. Following this he had a long stormy course with numerous complications including prolonged paralytic ileus, distention and wound disruption with evisceration. The operator described the aneurysm, as noted at the laparotomy, as a huge mass approximately 12 inches in diameter and extending from the level of the renal vessels to involve both common iliac vessels for a distance of about three inches.

Although this patient's convalescence following the above operations had been slow, stormy and complicated, he was in good condition at the time of this admission. He had no complaints other than the presence of an abdominal mass. Pulsations of the femoral, popliteal, posterior tibial and dorsalis pedis arteries were palpable bilaterally. Kidney function was satisfactory.

On November 4, 1958 an aneurysm extending from the renal vessels and involving both common and internal iliac vessels, with aneurysmal dilatation of the right internal iliac artery to its first branches, was resected and replaced with a dacron aortic bifurcation graft *(Figure 1)*. The aneurysmal portions of the internal iliac arteries were removed and the vessels ligated with no attempt made to anastomose either vessel to the graft. The bifurcation ends of the graft were sutured to the external iliac arteries.

The pathological diagnosis was arteriosclerotic aneurysm with thrombus formation.

The immediate postoperative period was excellent. Early difficulty in urinating soon cleared. Later the patient developed persistent recurrent hiccups and his sensorium was clouded and for several ways he was drowsy and mentally confused—complications which had also been present after his previous surgical procedures. Warmth, color and pulsations in both lower extremities were excellent. His chief complaint, however, was severe constant pain in the region of the coccyx, the right buttock and right hip. There was deep discoloration over the right buttock, with secondary involvement of the overlying skin. The coccygeal area showed similar discoloration with mild superficial ulceration.

He was discharged on his 13th postoperative day but was readmitted for a short period ten days later for drainage of a wound abscess from which coagulase negative staphylococcus albus organisms were cultured. During this admission he continued to complain of pain in the region of the coccyx, the right buttock and right hip, which made it difficult for him to walk. The underlying discoloration of the right buttock apeared more definite but smaller in area, and the skin involvement over this region and over the coccyx appeared to be improving.

When seen approximately two months postoperatively, his general condition continued to be very good. He no longer complained of pain around the coccyx, right buttock or right hip, although he did have a mild vague cramping in the sole of his right foot. He had also developed a troublesome diarrhea which gradually improved and cleared. The involved right buttock skin appeared discolored and pigmented but otherwise healthy. Six months after operation he was reported to be well and asymptomatic.

Comment: This case illustrates the delayed deep tissue necrosis of the buttock region with secondary skin necrosis which may result from ligation of the internal iliac arteries as noted by Tajes and Madden. The branches of the internal iliac arteries supply and anastomose with collateral vessels of all areas in which this patient complained of pain—the coccygeal area and buttock and hip. It is significant that his involvement was on the side on which the internal iliac artery showed most aneurysmal involvement requiring extensive resection *(Figure 1)*. We postulate that the generalized arteriosclerotic changes of this man's blood vessels also involved the collateral vessels, and that the critical blood supply to these

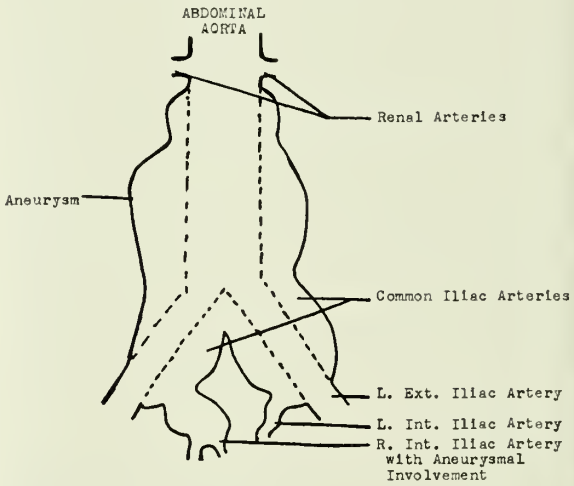

Figure 1. The unbroken line indicates the outline of the aneurysmal involvement of the vessels. The broken line indicates the prosthetic graft replacement.

areas was reduced to an inadequate level upon ligation of the internal iliac artery.

Summary and Conclusions

From a theoretical standpoint, collateral circulation following bilateral internal artery ligation appears to be adequate, and in practice these vessels have been ligated with impunity.

However, in diseases involving all the arteries of the body in general, such as arteriosclerosis, with involvement of the collateral vessels, obliteration of the internal iliac arteries results in reduction of a critical to an inadequate blood supply, with ischemia and interference with normal function. This explains the delayed deep necrosis of the buttocks with secondary skin involvement and compromise of the blood supply of a segment of the colon which have occasionally occurred.

We further postulate that urinary incontinence may result in such cases, and have presented a case in which severe urinary incontinence of three years duration was cured upon re-establishment of blood flow through obliterated internal iliac arteries.

Professional Arts Building
2110 East Douglas Avenue
Wichita 14, Kansas

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Simpler Method Described for Emergency Transfusions

A simplified method of giving blood transfusions in certain emergency cases was disclosed today by two Chicago doctors.

Writing in the *Journal of the American Medical Association,* Drs. John R. Tobin, Jr., and Irving A. Friedman described a new way to process transfusions which must be enriched with platelets, a blood component involved in coagulation. Such transfusions are used in emergencies to control bleeding and clotting.

". . . the usual methods for the preparation of platelet concentrates, platelet-rich plasma, or platelet-enriched whole blood incorporate techniques which are not available to the usual hospital blood bank, i.e., low-temperature processing, special anticoagulants, and the immediate availability of compatible blood donors," they said. "The inference that these latter techniques are essential . . . has deprived many hospitals of a valuable therapeutic tool."

"It is our contention that platelet transfusion . . . can be made readily available if the 'bank blood' . . . is used."

The doctors studied 13 patients given processed whole blood from normal donors, compatible with the recipient and in storage less than 48 hours.

They reported that bleeding "was dramatically controlled in five, partially controlled in five, and poorly controlled in three patients."

The doctors concluded that human platelets can be prepared for transfusion "without special procedures or immediately available compatible blood donors" and this should make such transfusions possible in most hospitals.

Dr. Tobin is associated with the departments of medical education and hematology of the Hektoen Institute for Medical Research of the Cook County Hospital and the departments of Medicine of the Stritch School of Medicine, Loyola University. Dr. Friedman is associated with the Chicago Medical School.

Enovid Therapy for Endometriosis

Potent Progesterone-Like Substances May Cause Unusual Findings

E. J. CHANEY, M.D., *Belleville*

THE TREATMENT OF endometriosis varies from analgesics to extensive surgical procedures. The recent introduction of potent progestational agents has provided physicians with a useful tool. There are many reports on the use of these agents, but few have mentioned the complication reported here. Perhaps this report will be interesting and useful to others treating this disease.

A 23-year-old white female was first seen on March 12, 1958, for severe dysmenorrhea. She had been seen elsewhere in November, 1957 for an acute surgical abdomen, and laparotomy revealed extensive pelvic endometriosis and bleeding from the right ovary. She had a left salpingo-oophorectomy and a partial right oophorectomy. The pathological report showed "Endometriosis of both ovaries and left tube." Since that time she had continued to have severe dysmenorrhea and pelvic pain. Physical examination was normal, and the uterus was normal in size, shape and position. The left adenexal area was thickened and a three to four cm. cystic area felt in the right adenexa. She was started on diethylstilbestrol in increasing dosage up to 175 mg. per day. She had spotting on this dosage, and it was discontinued, with the total time of stilbestrol therapy being 72 days. The stilbestrol was slowly discontinued over a weeks time and she experienced painless bleeding of a moderate amount for two days.

Pregnant Appearance

She was then placed on Enovid® 10 mg. daily and had no spotting or bleeding and felt well. She was seen at the emergency room of the hospital after 44 days of Enovid therapy complaining of severe lower abdominal cramping pain and vaginal spotting. Pelvic examination revealed a firm, tender uterus enlarged to the size of a six to eight weeks pregnancy.

The os was dilated three cm. and decidual appearing material protruded from it. The uterus was cleaned as well as possible with a dull curette. The material removed was grossly decidual in appearance, and an enormous amount was removed. Since that time she has remained well with no reoccurrence of her dysmenorrhea.

This material weighed approximately 45 grams and the patient passed more of the tissue for a week following the curettage. The tissue was sent to pathologists with a case history and the reports were as follows: "Placental tissue showing thrombosis of blood vessels and infection" and "Acute necrotizing endometritis with decidual-like reaction." A third reported "Decidual reaction."

Kistner's Report

Kistner has reported 12 patients treated with various types of estrogen with progesterone therapy and interestingly, three of the patients on estrogen followed by progesterone developed pain or had curettage for bleeding. One "aborted" a large decidual cast; another had a "voluminous amount" of tissue removed at curettage and the third had "profuse bleeding" and at curettage "Profuse curettings" were obtained.

Since others may use these agents they should be aware of this complication following stilbestrol therapy, and a report of the medication used, submitted along with any tissue sent to the pathologist. Pathologist should also be informed as to the picture seen when patients have been on Enovid since a confusing and erroneous report of the tissue could result.

Summary

A case report of massive decidual reaction following diethylstilbestrol and Enovid therapy is presented. I wish to thank Dr. J. Wm. Crossen of G. D. Searle and Company for his help and to Dr. J. O. Boley for his examination of the tissue.

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1325 18th Street
Belleville, Kansas

As I have come to understand men, it is clear to me that there is much more good will in them than appears. As the waters of visible streams are small compared with those that flow below the ground, so also the visible idealism of men in comparison with that which they cherish within them unrevealed or barely so. —*Albert Schweitzer*

Tinea Capitis

Treatment Using Oral Griseofulvin Therapy

GORDON C. SAUER, M.D., ***Kansas City***

This is a report on oral griseofulvin therapy of 23 children with ringworm of the scalp. The dosage of griseofulvin administered was 500 mg. daily for three to five weeks, with the majority of patients receiving only four weeks of therapy. The purpose of this study was to determine the minimum dosage, the optimum duration of treatment, and the necessary additional management of these cases.

Tinea due to three species of fungi are reported. There appears to be no essential difference in the species response to griseofulvin therapy.

There was one treatment failure out of the 23 cases using a dosage of griseofulvin the author considers to be a minimal amount of the drug.

Toxicity consisted of mild headaches in two cases, with transient hives in one of these two cases.

ANOTHER THERAPEUTIC MILESTONE was announced to the medical profession on December 10, 1958 when Doctors Blank and Roth presented their paper on "The Treatment of Dermatomycoses With Orally Administered Griseofulvin" at the meeting of the American Academy of Dermatology. This report covered 31 cases of superficial fungus infection treated in the previous three months since the drug had been received in this country. Simultaneously, investigations in England were reporting on guinea pig, cattle, and human fungus infections treated with griseofulvin.

As is true of any new drug that suddenly flowers as a therapeutic miracle, many years of cultivation and study preceded the apparent blossoming. Griseofulvin is a derivative of *Penicillium griseofulvum* and was first isolated in 1939. In the succeeding 19 years until 1958 over 40 articles concerning griseofulvin appeared in the scientific literature. The majority of these articles were concerned with the chemistry of the agent but in 1946 the first report was published on a vital effect of griseofulvin. This biologic effect was its ability to produce curling and stunting of the germ tubes of the fungus *Botrytis allii.* In 1958, Gentles reported on the oral treatment of experimental ringworm occurring in guinea pigs.

The medical literature will be soon bursting forth with the fruits of 20 years' work on this chemical. To date, there have been five cases of tinea capitis (ringworm of the scalp) treated with griseofulvin. These cases were treated with a daily dose of from one to two Gm. The purpose of this paper is to present 23 cases of children treated with a dose of only ½ Gm. per day. In the summary I will attempt to define the minimum dosage needed, the minimum duration of therapy, the necessary additional management of these scalp infections, and propose a tentative treatment schedule.

To accomplish these objectives, several illustrative cases will be reported. All cases were followed with a preliminary blood count and urinalysis that was repeated after at least two weeks of therapy. Cultures for fungi were made at weekly intervals.

Case Reports

Patient No. 1. A four-year-old white male. The parents first noticed scalp hair loss around one month prior to the first office visit on December 15, 1958. Examination of the scalp revealed six areas of hair loss with bluish-green fluorescence under the Wood's light. A hair was cultured on Sabouraud's media and the growth was identified as *M. Audouini.* Treatment consisted of the routine measures such as daily shampooing, wearing of white cotton cap, and twice a day application of salve consisting of five per cent ppt. sulfur in Salundek ointment. On January 28, 1959, six weeks later, the infection was still present and the patient was placed on griseofulvin (Fulvicin) 125 mg. q.i.d. All local therapy was stopped. After one week of therapy the only change was the disappearance of soreness in the lymph nodes in the neck. A potassium hydroxide preparation of a hair showed

Doctor Sauer is head of the Section of Dermatology, University of Kansas School of Medicine. The griseofulvin (Fulvicin®) used in this study was generously supplied by G. Kenneth Hawkins, M.D., of Schering.

I am indebted to Dr. Robert Hudson for his clinical assistance and to Mrs. Kay Wahl for the drawing of *Figure 1.*

ectothrix infection and the culture grew *M. Audouini.* After two weeks of treatment the fluorescent area on hair was seen to have grown out slightly from the scalp. The KOH preparation and culture were both still positive. A complete blood count and urinalysis on this date showed no change from tests done before the therapy was begun. After three weeks of therapy with griseofulvin the color of the fluorescence had changed it pale yellow. The KOH preparation and culture were positive. Following the completion of four weeks of treatment the griseofulvin was discontinued. Only faintly fluorescent stubs of hair were seen. The KOH preparation was questionably positive. The Sabouraud's culture was positive. At the end of five weeks since the onset of therapy there was pale fluorescence of three tips of hairs, there was not enough material for a KOH preparation but the culture was positive. At the end of six weeks, the fluorescence was not seen and the culture was negative. Examination ten weeks after therapy was begun revealed no evidence of infection.

Patient No. 15. A nine-year-old white female. The patient was first seen on November 3, 1958. The mother stated that scaly lesions first developed on the arms and knees but for three weeks they had been present on the scalp. The child had been playing with a neighbor's kitten. Examination revealed 20 per cent of the scalp hairs to be fluorescent. Local treatment was prescribed. Culture on Sabouraud's grew *M. canis.* After 12 weeks of local therapy and manual epilation of the hairs, there was no improvement. No kerion had developed. On January 27, 1959 all local therapy was stopped and the patient was placed on griseofulvin (Fulvicin) therapy of 125 mg. q.i.d. She was followed at weekly intervals with KOH preparations and cultures. There was no change in a complete blood count and urinalysis taken before therapy and after two weeks of therapy. The most interesting observation was the progression of the fluorescent "cast" that surrounded the hair shaft growing out with the hair. This is portrayed in *Figure 1.* Therapy was stopped after three weeks. The KOH preparation and culture were negative five weeks after the onset of treatment. A few fluorescent casts remained on her long blonde hair until after the eighth week since the onset of therapy due to the fact that so many hairs were initially infected, and physical removal, except by shaving, was impossible. Re-examination at the end of 12 weeks showed no evidence of infection.

Patient No. 23. A four-year-old negro male. This patient was seen because of pustules in the scalp since February 1959. His sister had had similar lesions *(Patient No. 21)* and received griseofulvin therapy. Examination revealed a moderate number of pustular like lesions in the scalp. There were no fluorescent hairs under the Wood's light. Culture on Sabouraud's media grew *T. mentagrophytes.* On April 30, 1959 the patient was placed on griseofulvin (Fulvicin) therapy, 500 mg. to be taken in the morning. He was then followed at weekly intervals. At the end of three weeks the pustules had disappeared. A complete blood count and urinalysis at that time showed no change from pre-treatment tests. Griseofulvin therapy was stopped at the end of five weeks. At this date the culture was negative. Final examination 10 weeks after therapy was begun showed no evidence of infection.

Discussion

Data for the entire series of 23 cases are presented in table 1. It is seen that initially a dose of 125 mg. q.i.d. was administered for three weeks. This proved curative for three cases of tinea capitis (two due to *M. canis* and 1 due to *M. Audouini).* However to accomplish this cure, it was necessary to supplement the griseofulvin therapy with manual epilation or trimming off of the grown out infected hair shafts. Several office visits working with the Wood's light were needed to do this. Thus, it was decided that the therapy should consist of the same dosage but administered for four weeks instead of three weeks. The only further change in this regime was to prescribe that the 500 mg. daily dose for these children be given as a single morning dose. The reasoning behind this latter change was the finding by Gentles *et al.,* that griseofulvin was deposited in the keratin of the hair. Apparently griseofulvin is mainly excreted from the body by the slow process of being shed with the dead epidermal keratin. It thus became apparent that griseofulvin would be equally as effective or even more effective when taken in a larger but single daily dose. Also, because of this slow method of griseofulvin excretion, this chemical continues to be effective for some weeks after the drug ingestion stops, or as long as the Keratin is not shed. With the hair, this shedding can take place slowly over a several month period; with the epidermal cells of the skin, it is a matter of days or weeks.

Toxicity

The only toxic effects seen during griseofulvin therapy of the 23 patients consisted of mild headaches

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Since September 30, 1959, when the article was accepted, a case due to *M. canis* has relapsed. This occurred in Patient No. 20, four months after therapy was stopped. Eight weeks of additional therapy of griseofulvin, 250 mg. twice a day, resulted in a cure.

The other treatment failure, following what is now known to be inadequate therapy of only four weeks, in Patient No. 12, was treated elsewhere with longer therapy and larger doses of griseofulvin and was cured. This case was due to *M. Audouini.*

The conclusion remains that therapy should be administered for six to eight weeks, and that the final decision on cessation of therapy rests with the Wood's light findings or the results of the other laboratory tests.

TABLE 1

TINEA CAPITIS TREATED WITH ORAL GRISEOFULVIN

Patient	*Age*	*Sex*	*Race*	*Weight (lb.)*	*Duration of Disease (Mo.)*	*Daily Dose (Mg.)*	*Duration of Treatment (Wk.)*	*Total Dose (Gm.)*	*Culture Neg. (Wk.)*	*Fluor. Neg. (Wk.)*	*Toxicity*	*Comments*
ORGANISM: M. AUDOUINI												
1. R. A.	4	M	W	43	3	125 q. i. d.	4	14	6	6	None	
2. L. W.	6	M	W	40	3	125 q. i. d.	3	10.5	5	5	None	
3. D. A.	6	M	W	47	2	125 q. i. d.	4	14	7	9	None	
4. J. A.	1½	M	W	25	2	250 b. i. d.	3	10.5	4	3	None	
5. R. K.	5	M	W	48	3	125 q. i. d.	4	14	5	7	None	
6. L. W.	4	M	N	37	13	500 A. M.	4	14	5	5	None	
7. P. M.	8	M	N	67	9	500 A. M.	4	14	7	5	None	
8. C. H.	8	M	W	75	17	500 A. M.	4	14	4	4	Hives & headache, 3 days	Failure of x-ray epilation
9. D. B.	9	M	N	54	3	500 A. M.	3	10.5	7	5	Mild headache, one week	No effect on concurrent urticaria pigmentosa
10. L. B.	7	M	N	48	12	500 A. M.	3	10.5	5	5	None	
11. V. M.	7	F	W	56	12	500 A. M.	4	14	3	5	None	Failure to spot x-ray epilation
12. M. D.	6	M	W	37	1	500 A. M.	4	14	..	..	None	At end of 9 weeks, infection remains. Being retreated
13. H. L.	3	M	N	32	5	500 A. M.	4	14	4	5	None	
14. R. J.	3	M	N	26	5	500 A. M.	4	14	4	4	None	
ORGANISM: M. CANIS												
15. P. B.	9	F	W	56	4	125 q. i. d.	3	10.5	5	8	None	
16. R. R.	8	M	W	62	1	125 q. i. d.	3	10.5	4	4	None	2 week interval between treatments
17. T. B.	3	M	W	30	2	250 b. i. d.	2 & 5	24.5	12	12	None	1 week interval between treatments. Kerion healed in 6 weeks
18. G. B.	6	M	W	45	1	250 b. i. d.	1 & 3	14	9	5	None	Failure to spot x-ray epilation
19. D. L.	7	F	W	63	4	250 b. i. d.	4	14	5	5	None	
20. B. K.	8	F	W	46	2	500 A. M.	4	14	9	9	None	Kerion healed in 5 weeks
ORGANISM: T. MENTAGROPHYTES												
21. L. M.	5	F	N	50	3	125 q. i. d.		..	4	..	None	Pustural lesion healed in 4 wks. Also has onychomycosis and is still on treatment
22. D. B.	7	F	N	56	6	500 A. M.	4	14	8	..	None	Pustular lesions healed in 3 weeks
23. B. M.	4	M	N	40	2	500 A. M.	5	17.5	5	..	None	Pustular lesions healed in 3 weeks

during the first week of treatment in two cases, and transient hives in one of these patients. *Patient No. 8*, who was receiving 500 mg. of griseofulvin in the morning noted mild hives and headache on the second day of treatment. These continued for two more days until treatment was stopped for one day. When therapy was resumed, the dose was changed to 250 mg. b.i.d. and no further headaches or hives developed. After two weeks of this schedule the dose was changed back to 500 mg. taken in the morning and no side effects were noted. The mother stated that when the boy was two years old he had developed a measles-like eruption concurrent with penicillin therapy.

Failure of Treatment

There was one case of the 23 that failed to respond to the initial treatment with griseofulvin. *Patient No. 12,* a six-year-old white institutionalized blind boy, had *M. Audouini* infection of scalp and was given a 500 mg. daily dose of griseofulvin for four weeks. When therapy was discontinued his scalp lesions still flouresced and a culture was positive. The patient was then followed at Wichita Clinic, Wichita, Kansas by Drs. F. H. Chard and H. T. Gray. Weekly examinations revealed that, at the end of nine weeks from the onset of therapy, fluorescent hairs were still present, new lesions had developed and a culture was

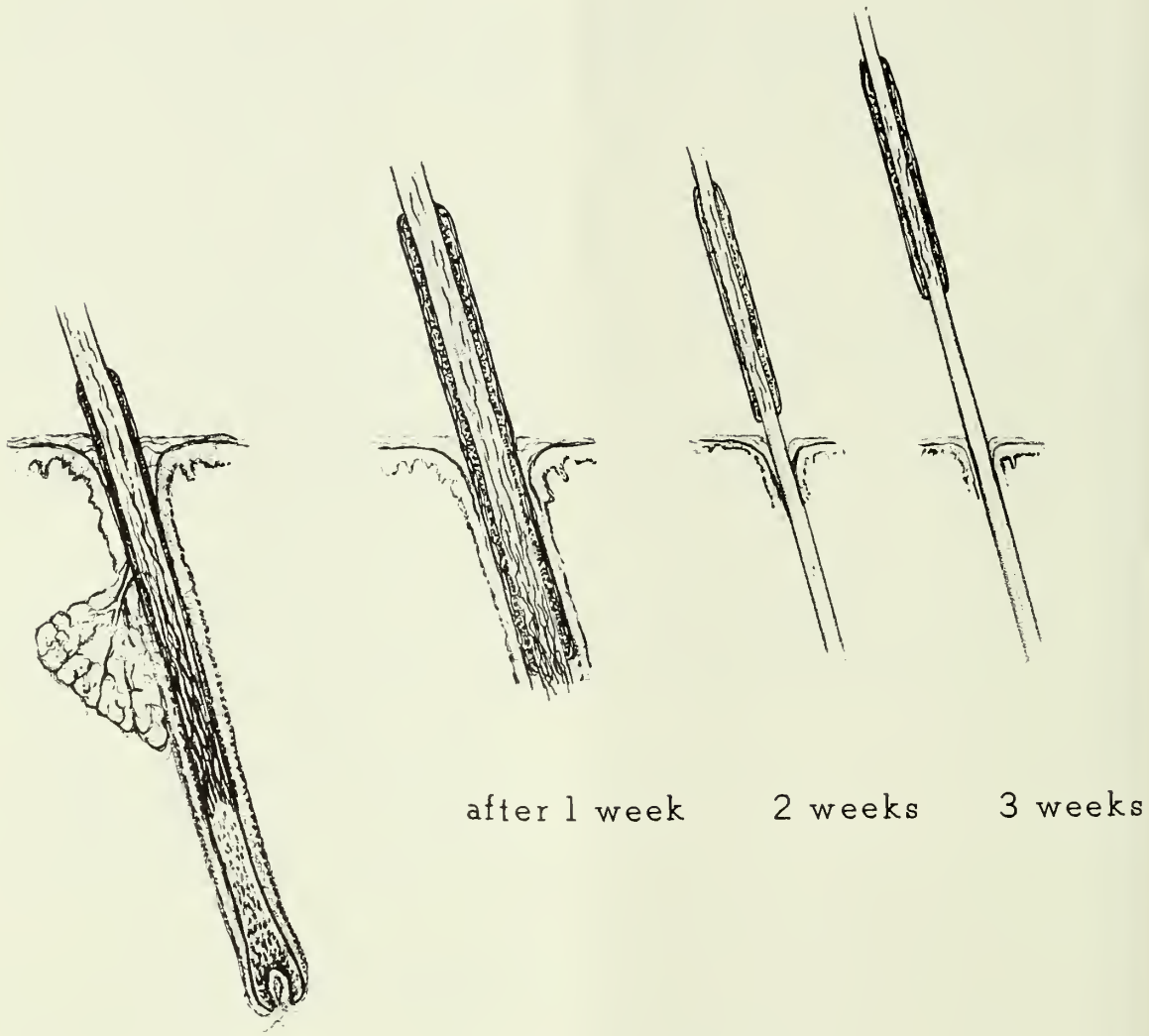

Figure 1. Schematic drawing of hair follicles showing the fluorescent cast. Under griseofulvin therapy it was noted that the majority of the hairs acted as portrayed in this drawing. The fluorescent infected cast moved out with the growth of the hair so that within three to four weeks after the initiation of griseofulvin therapy the source of infection could be removed by clipping the hair below the fluorescent cast. This drawing was made from a patient with tinea capitis due to *M. canis* but similar observations were made in patients with *M. Audouini* infection.

still positive for the fungus. The patient is being retreated and therapy will be continued for six weeks.

Summary

On the basis of this preliminary study, the following treatment is suggested for tinea capitis in children, regardless of the causative organism: **1.** Griseofulvin should be administered in a dosage of 250 mg. b.i.d. or 500 mg. once a day for a period of six weeks. **2.** No local therapy is necessary. **3.** The child should not be dismissed from the physician's care until fluorescence, if present, has disappeared completely. For those rarer cases of scalp ringworm due to endothrix fungi, where no fluorescence is present, a negative culture is necessary before a cure can be pronounced.

Conclusion

It appears that a long sought for oral agent for treating tinea capitis has been found. A considerable amount of additional research will be forthcoming, and undoubtedly, improvements will be made upon this original antibiotic. It is not premature, to stress that the cure of tinea capitis will still require the knowledge necessary to make a correct diagnosis, and provide proper follow-up care of the patient. Griseofulvin, and the griseofulvin-like agents to come, will not be panaceas; but for the doctors who in years past have handled these chronic scalp ringworm cases, particularly those due to *M. Audouini,* griseofulvin approaches this panacea.

425 E. 63rd Street
Kansas City 10, Missouri

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1958 Mortality

Heart disease, cancer, strokes, and accidents accounted for 71 per cent of all deaths in 1958, according to final data on 1958 mortality released by the Public Health Service's National Office of Vital Statistics.

The 1,647,886 deaths that occurred in 1958 gave the nation a death rate of 9.5 per 1,000 population, compared to a rate of 9.6 in 1957. The number and the rates per 100,000 population for each of the four leading causes of death in 1958 follow:

	Number	*Rate*
Heart disease	637,246	367.9
Malignant neoplasms, or cancer	254,426	146.9
Vascular lesions (chiefly strokes)	190,758	110.1
Accidents, all forms	90,604	52.3
Motor-vehicle accidents	36,981	21.3
All other accidents	53,623	31.0

The death rates for heart disease and cancer in 1958, 367.9 and 146.9 respectively, were slightly lower than the comparable rates in 1957, 369.6 and 148.7. The rate for vascular lesions remained about the same. The death rate for accidents, 52.3, was almost seven per cent lower than the rate of 56.0 in 1957, with the percentage decrease being slightly lower for motor-vehicle accidents than for all other forms of accidents.

Chiefly as a result of the influenza epidemic of 1957-58, the toll of deaths from influenza and pneumonia remained high in 1958—57,439 deaths, or a death rate of 33.2 per 100,000 population. The death rate for these conditions in 1958, the second highest in 10 years, was more than seven per cent lower than the rate of 35.8 recorded in 1957.

Committee REPORTS

The Stormont Medical Library

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This article was prepared by Mrs. Blendena Evans, librarian of the Stormont Medical Library. It was requested by the Kansas Medical Society Stormont Medical Library Committee, Benson J. Powell, II, M.D., chairman. This committee submits this article to the *Journal's* readers in hopes that it will stimulate further interest in the Stormont Medical Library and in the hopes that more Kansas physicians will utilize the services offered by their state medical library.

The other members of this committee are: J. A. Dunagin, M.D.; W. E. Hird, M.D.; N. M. Jenkins, M.D.; G. A. Lessenden, M.D.; D. S. Lowe, M.D.; M. C. Pearson, M.D.; M. F. Stock, M.D.; R. G. Weiner, M.D.; and R. P. Woods, M.D.

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another library on an inter-library loan. When time permits, a bibliography will be prepared at the doctor's request and he may select that which he wishes to borrow.

Books and periodicals are permitted to circulate freely and loans are sent anywhere in the state of Kansas. The patron pays the cost of the postage, which is at the low rate of four cents for the first pound and one cent for each additional pound.

Its History

The Stormont Medical Library was established as a living memorial to Dr. David W. Stormont, by his wife, Mrs. Jane C. Stormont, through the *Kansas Medical Society*. In 1889, it was enacted by the Kansas Legislature, and the gift was accepted subjected to the terms that were mentioned in the preamble. The $5,000 presented by Mrs. Stormont was to remain a "perpetual endowment fund," the interest to be used for the purchase of books, charts, and magazines. This Library is to form and constitute a part of the library of the state of Kansas and "Shall be forever kept and maintained with the state library in the capitol building." The Library shall be forever free for the people of Kansas, and particularly for the medical profession of the state. The law accepting the gift provided that the Kansas Medical Society should appoint a medical library committee whose members would be available to advise on the purpose of medical books or aid in any matters concerning the welfare of the library.

The Library collection consists of medical texts, proceedings and studies of various organizations and institutions, clinical papers, directories and special reports, government publications relating to health, miscellaneous scientific material and many periodicals which are of interest and value to the medical profession. This material relates to chemistry, biology and allied subjects, industrial poisons, pharmaceutical formulas, and etc.

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8. It is a poor policy to take all the vacation time which is provided for you.
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If you are eligible for The Coronary Club, or are working hard to meet the requirements, isn't it time to take a personal inventory to see if you actually *want* to join?

Maternal Mortality

The patient, a 40-year-old gravida VII para III died in a well equipped hospital in a small town. The cause of death was stated as "post-partum hemorrhage and rupture of the uterus." A normal five pound, 6¾ ounce infant was delivered prior to death. The cause of death was confirmed by autopsy. There were no surgical or medical abnormalities in the history except relating to previous pregnancies. The first, third, and sixth pregnancies terminated as early spontaneous abortions. Curettage was required to control the bleeding in the last one. The second pregnancy was terminated by induction with Pitocin® at term. This pregnancy was complicated by hemorrhage following delivery and transfusions were given. The fourth and fifth pregnancies terminated as spontaneous deliveries with no hemorrhage following.

The final pregnancy progressed within normal limits until about 19 days from term. The patient gained only 11 pounds after the third month. Laboratory studies were within normal limits. The patient was bothered considerably in the final weeks by false labor contractions and entered the hospital following several hours of irregular contractions at home. The cervix was considered about ¾ effaced and a fingertip dilated on admission. Contractions remained desultory for some 28 hours at which time stimulation was undertaken by use of intravenous Pitocin, one cc. in one liter five per cent dextrose. Contractions immediately increased to a strong quality and remained so for some 2½ hours. They then increased to unusually strong. Labor from the beginning of the Pitocin until the termination of the first stage totaled 5½ hours. The second stage lasted 25 minutes and the third stage two minutes. It was noted that the membranes ruptured spontaneously at the time the patients was five to six centimeters dilated. This was accompanied by a considerable amount of bleeding.

The execution of the delivery was seemingly normal with intramuscular Pitocin and ergotrate following delivery in the routine manner. The uterus was found to be firm and the pulse was full and regular with the blood pressure 106/78. It was noted, however, that the patient seemed apprehensive. The physician left the hospital 30 minutes after the delivery in the belief that her condition was normal. However, she suddenly developed the classical signs of shock and when a nurse massaged the uterus it expelled an estimated liter of blood from the vagina. The physician returned immediately and administered two cc. of Pitocin intramuscularly and ergotrate, grains 1/320 intravenously. The patient was placed in shock position and oxygen was administered. Venous collapse had occurred and cut down was performed to permit administration of Dextran®, 500 cc., intravenously. This was given in about 30 minutes. A physician was also called in for consultation when the bleeding was discovered. Levophed® in five per cent dextrose was started intravenously and Wyamine®, five cc., was given in three doses. The patient failed to respond to these procedures and died two hours following delivery.

Committee Opinion

The following conclusions were reached by the committee in a process of discussion:

1. The patient was a poor candidate for induction of labor by means of intravenous Pitocin because:
   a. she was not at term and the cervix was not sufficiently ripe;
   b. her age and parity were contraindications. In this connection it is thought possible that, at the time of her first term delivery (which was accomplished by induction and resulted in bleeding requiring transfusion) there may have been an occult rupture of the uterus with subsequent scar formation which was the site of the rupture which occurred at this time.
2. Rupture may have been caused by the patient being allowed to bear down with an incompletely dilated cervix.
3. Blood should have been available in the hospital for transfusion.
4. In all cases of Pitocin-induced labor and in cases where there is excessive bleeding at the time of delivery, it is advisable to explore the uterus manually for possible rupture.

There was considerable discussion and varied opinion about the advisability of using Levophed and Wyamine in a case in which the source of bleeding had not been discovered and corrected, inasmuch as raising the blood pressure would result in more blood loss. However, no complete agreement was reached on this point.

Classification

Maternal death, direct obstetric, avoidable.

One of a series of case reports prepared by the Committee on Maternal Welfare to illustrate the type of study made in each instance of maternal death in Kansas.

Fever, Irritability, Anorexia, and Dyspnea in an Infant

Case Presentation

A 17-month-old colored male baby was admitted to KUMC from the outpatient clinic on August 6, 1958, with a history of irritability, anorexia and tachypnea for about ten days. On July 27 he developed fever, malaise, vomiting, and cough. He was seen by a local physician and at the KUMC emergency room and in the pediatrics outpatient clinic. He received 1,800,000 units of benzathine penicillin for the treatment of bronchopneumonia. His response was poor, however, and he subsequently was admitted for further evaluation.

PHYSICAL EXAMINATION

The patient was a well developed, well nourished, well hydrated infant in moderate respiratory distress with a rate of 44 per minute. There was minimal costal retraction. His eyes, ears, and nose were normal. His tonsils were large, and he had many shotty cervical nodes. His neck was supple. There was a slight precordial bulge in the chest. The lung fields were clear to percussion and auscultation, and there was no cardiomegaly or murmurs. The abdomen was soft, and the liver was felt three cm. below the right costal margin. There were no masses or tenderness. There was pallor of the nailbeds, but otherwise the remainder of the physical examination was not remarkable.

LABORATORY

On admission the urine was acid in reaction. It contained no albumin or sugar and only an occasional pus cell per high power field. The quantity was not sufficient to determine the specific gravity. The hemoglobin was 8.7 gm.; the hematocrit, 30 ml.; white count, 15,300 with 49 per cent polymorphonuclears (48 per cent filamented), 45 per cent lymphocytes, five per cent eosinophils, and one per cent monocytes. On August 8 the white count was 10,650 with the differential essentially the same as before. On August 11 the hemoglobin was 10 gm.; reticulocyte count, five per cent; white count, 9,900 with 70 per cent polymorphonuclears (65 per cent filamented), 29 per cent lymphocytes, and one per cent eosinophils. Tuberculin and histoplasmin skin tests were negative at 48 hours. A sickle cell preparation and a Silverman test were negative. Routine nose cultures showed non-hemolytic Staphylococcus aureus; a throat culture showed alpha streptococci and pneumococci. A postmortem spinal fluid on August 11 showed nine white blood cells, 1,281 red blood cells; sugar, 78.4 mg. per cent; protein, 15 mg. per cent.

HOSPITAL COURSE

Routine studies and medication were directed toward the treatment of bronchopneumonia and of iron deficiency anemia with secondary cardiomegaly. The baby was afebrile until the day of death (August 11) when his temperature rose to 100.4 degrees. His response to therapy was slow, but was considered to be satisfactory until August 11 when he developed grunting respirations and tachycardia. He refused breakfast and vomited once during the morning and again in the afternoon. During the afternoon he had a convulsion and became apneic. Artificial respiration and oxygen were administered, but the heart tones were faint, and the pulses were weak and thready. Finally the heart tones ceased, and further efforts at resuscitation were unsuccessful. The baby died at 4:10 p.m. on August 11.

Dr. Mahlon Delp (moderator): Are there any questions?

Edited by Jesse D. Rising, M.D., and Mahlon Delp, M.D. from recordings of the proceedings of the conference participated in by the departments of medicine, pediatrics, surgery, radiology and pathology of the University of Kansas Medical Center as well as by the third and fourth year classes of students.

Patrick Barrett (student)*: Was there any further liver enlargement during his hospital course?

Dr. Donald M. Stewart (resident in pediatrics): No. On the morning of the day of death the liver was still three cm. below the costal margin.

Wayne Attwood (student): Did he have a history of any previous illnesses?

Dr. Delp: No, he did not; however, he was seen in the emergency room in May, and at that time the mother reported that he had had measles about four days before.

John Hallewell (student): Were the femoral pulses palpable?

Dr. Stewart: They were palpable and equal on admission.

Hale Dougherty (student): What was his family history?

Dr. Stewart: The family history was not significant.

Mr. Dougherty: Were there any other children in the family?

Dr. Stewart: There were five siblings from three to nine years of age, all living and well.

Frank Emery (student): What was his nutritional history before his hospitalization?

Dr. Stewart: The baby was still being bottle fed and, apparently, he drank lots of milk. The mother said that he ate from the table, but there was some doubt about that. He apparently ate little or no meat.

John Granzella (student): Was he restless after eating?

Dr. Stewart: No, he was not.

Mr. Dougherty: Had he been in contact with anyone having lung disease?

Dr. Stewart: Not that we could determine.

David Hardy (student): What immunizations had he received?

Dr. Stewart: He had had one injection of poliomyelitis vaccine, and it was reported that he had had DPT toxoid once in the well-baby clinic. He had not been vaccinated for smallpox.

Mr. Emery: Did he have any petechiae?

Dr. Stewart: No, he did not.

Mr. Hardy: Was there any evidence of venous engorgement during his hospitalization?

Dr. Stewart: No.

Mr. Dougherty: Will you describe his terminal event?

Dr. Stewart: The baby was vomiting and had grunting respirations, but his physical examination was negative. He was started on chloramphenicol one day before death, but the drug was discontinued in the belief that it might be upsetting his stomach. Terminally, he had a convulsion.

Mr. Attwood: Was the post-mortem spinal tap bloody?

Dr. Stewart: Yes, it was.

Dr. Delp: How soon after his death was the spinal tap done?

Dr. Stewart: Almost immediately.

Mr. Emery: Did he receive intravenous fluids during his hospitalization?

Dr. Delp: No.

Mr. Granzella: Did he have any murmurs at any time?

Dr. Stewart: No.

Mr. Barrett: Was he ever given digitalis?

Dr. Stewart: No.

Mr. Dougherty: Was a gallop rhythm heard?

Dr. Stewart: No, it was not.

Mr. Attwood: What was his heart rate?

Dr. Stewart: Terminally, it was rapid, weak, and thready.

Mr. Attwood: Will you describe his heart tones?

Dr. Stewart: On admission the heart tones were good, and they remained unchanged throughout his hospitalization.

Dr. Delp: It was reported that the baby had been crying out during his last few days. Do you believe that he cried because he was having pain?

Dr. Stewart: He probably was having some pain.

Dr. Delp: If there are no more questions, we will now have the x-rays.

X-RAYS

Mr. Emery: All three films were taken on August 4, two days before admission. The first film *(Figure 1)* was not a direct P-A view, but was slightly rotated giving an impression of tracheal deviation; I do not believe, however, that deviation actually existed. No bony abnormalities are seen. There are no unusual soft tissue shadows in the lung fields, and the costophrenic angles are clear. There is evidence of increased bronchovascular markings in both lungs. The heart is diffusely enlarged and globular in shape. There is a suggestion of an increase in size of the pulmonary outflow tract. The liver appears enlarged beyond the limits of normal for a child of that age. The spleen is visualized, but I do not believe it is enlarged. Normal gas shadows are present throughout the small intestine.

The second x-ray, an expiratory film, shows essentially the same findings as seen in the first film.

A lateral film shows normal bone structure. The exact findings in the heart are difficult to determine, but I believe that there is a suggestion of an increase in the pulmonary outflow tract. The heart appears

* Although a student at the time of this conference in December, 1958, he, like the others referred to as students, received the M.D. degree in June, 1959.

generally enlarged. Abdominal findings are essentially the same.

Dr. Delp: Dr. Youngstrom, do you have any remarks?

Dr. Karl Youngstrom (radiologist): How does one recognize an enlarged liver in an x-ray, and what would be the basis for reporting enlargement? We must not merely take into account that the liver is below the costal margin, but consider the position of the top border. My impression here is that the liver is not significantly enlarged. The heart is grossly enlarged. There is prominence of the interlobar fissure consistent with an old inflammatory process, and there is some pulmonary infiltrate of soft hair-like character consistent with the diagnosis of a bronchopneumonia.

Dr. Delp: Thank you. Mr. Barrett, may we have the discussion now, please?

DIFFERENTIAL DIAGNOSIS

Mr. Barrett: Ten days before admission this 17-month-old colored male infant developed irritability, anorexia, and tachypnea. He had received treatment from his local physician, and he had been seen in the outpatient clinic here. He was diagnosed as having bronchopneumonia, and he was treated with penicillin, but with no improvement. Two days before admission x-rays showed cardiomegaly. He died on his fifth hospital day.

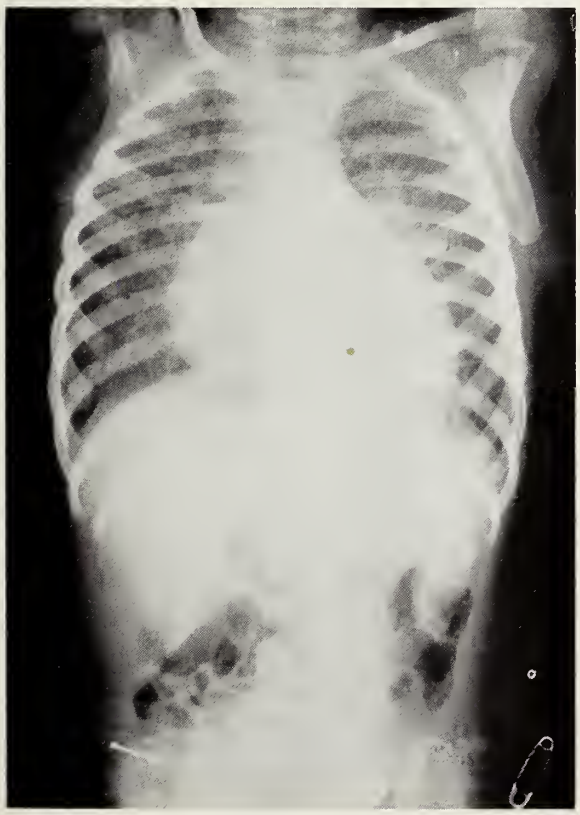

Figure 1. Chest film taken on August 4, 1958.

The baby was well developed and well nourished, but he appeared to be in moderate respiratory distress. There was a slight precordial bulge. No murmurs were heard, and there was no cyanosis. The liver was enlarged three cm. below the right costal margin. Laboratory tests showed a microcytic, hypochromic anemia, and a slightly elevated white count.

I shall first consider respiratory diseases because this child surely presented with a respiratory infection. I believe that he had pneumonia on admission, and that he died of pneumonia. That disease can be ruled out as the primary process, however, because he had no fever, nose and throat cultures were normal, and he had adequate antibiotic therapy. Acute tuberculosis or histoplasmosis cannot be dismissed, although there was no splenomegaly or evidence of multiple system involvement. Also, the skin tests were negative, and he was afebrile.

Cystic fibrosis of the pancreas often has its onset with primary lung involvement, but that diagnosis can be excluded because there was no evidence of repeated infections or obstructive emphysema, the patient was well developed, and the Silverman test was negative.

Cardiomegaly is probably the most important single feature of this patient's disease. He had a microcytic, hypochromic anemia, but he responded to iron therapy as evidenced by the reticulocyte count. For this reason I do not believe that the anemia was so severe as to cause cardiomegaly. Other anemias can be ruled out on the same basis.

Left to right shunts can be dismissed because there were no cardiac murmurs and no increased pulmonary vascularity, and right to left shunts can also be dismissed because there were no murmurs or cyanosis. Coarctation of the aorta can be ruled out because of the normal femoral pulses. All other congenital anomalies such as transposition of the great vessels and valvular lesions could result in a murmur, but our patient did not have any of these.

Anomalous origin of the left coronary artery from the pulmonary artery should be considered, but less than 60 cases of that disease have been reported. Birth and development are usually normal until the ductus arteriosus closes off at which time there is a fall in pressure in the pulmonary artery which could easily lead to backflow in the left coronary artery or its anterior descending branch during diastole making it functionally a vein rather than an artery. Electrocardiographic findings of children with this condition usually resemble those of adults with an anterior myocardial infarction. That diagnosis, however, can be dismissed because of the patient's age. He may

have had a small anomaly, but he did not present the typical angina-like syndrome after eating.

Beri-beri and Kwashiorkor are only of academic interest in this country. Rheumatic heart disease is certainly the most common acquired heart disease, but it is rare at the age of our patient. Furthermore, he was afebrile and did not show evidence of pain or swelling in his joints. I shall rule out other acute myocardiopathies including diphtheria, mumps, poliomyelitis, Coxsackie, and psittacosis because of the lack of history. Bacterial endocarditis is a possibility and cannot be ruled out, but it is usually secondary to an infection or sepsis elsewhere.

Rhabdomyoma of the heart is an unlikely diagnosis because it usually has the presenting symptom of cyanosis, and death occurs suddenly.

Twenty-four cases of cardiac glycogen storage disease have been reported of which none of the patients was well developed or well nourished, and they usually had muscle weakness, macroglossia, and poor appetites with no weight gain. Ninety per cent of the patients with that disease die within the first year.

Coronary calcinosis, of which 40 cases have been reported, usually has an abrupt onset with cyanosis, dyspnea, cardiomegaly, and hepatomegaly. That is an unlikely diagnosis here, however, because there is no x-ray evidence of arterial calcification.

Persistent paroxysmal atrial tachycardia should certainly be considered in any child who has cardiomegaly of undetermined origin. Congestive heart failure is the most important presenting symptom, and the diagnosis is usually made from the typical electrocardiograph findings and from the patient's response to vagotonic maneuvers and digitalis. The mortality is low, however, and I shall dismiss it as a likely diagnosis.

One hundred and thirty cases of myocarditis have been reported, and it is a possible diagnosis here. Patients with that disease may become dyspneic and cyanotic, and death may occur within minutes. Usually, however, a mild respiratory infection develops associated with malaise, irritability, cough, slight fever, and vomiting, and these symptoms usually progress to cardiac heart failure. The patient's past history is more often non-contributory. The patients are almost always well developed, and the physical examination usually shows pneumonia and congestive heart failure, usually without cyanosis. The x-rays show an enlarged heart.

It is my belief that our patient had endocardial fibroelastosis which is of unknown etiology and tends to be familial. Symptoms often appear in a well developed child with the sudden onset of left heart failure associated with dyspnea, cough, irritability, and restlessness. Treatment consists of penicillin or other antibiotics, but the patient usually does not respond. After several days he is hospitalized, and a chest x-ray shows cardiomegaly. Cyanosis and murmurs rarely appear in that disease. I believe that the patient had fibroelastosis with, perhaps isolated myocarditis.

In summary, the patient presented here in the outpatient clinic with bronchopneumonia at which treatment was directed. He showed no improvement, however, and he was subsequently admitted to the hospital. Again, he was treated for bronchopneumonia and iron deficiency anemia, but his improvement was slow. I believe he had congestive heart failure on admission, and that bedrest gave him some relief. On the day of death he probably had an acute exacerbation of congestive heart failure. Terminally, he had a convulsion and became apneic on the basis of cerebral hypoxia. The pathologist will probably report a dilated and hypertrophied heart, particularly the left ventricle, and a thickened and opaque endocardium. Microscopic examination should show fibrosis and proliferation of elastic tissue of the subendocardial area, particularly in the left venticle, and the lungs and liver should be passively congested. I believe that the child had bronchopneumonia at death.

Clinical Discussion

Dr. Delp: What is your diagnosis, Mr. Hardy?

Mr. Hardy: Isolated myocarditis. Children with that disease usually die between the ages of six months and two years. Myocarditis has been postulated to be viral in origin although viruses have not been cultured. He may have had a Coxsackie virus infection, but that is unusual.

Dr. Delp: Mr. Granzella, what is your diagnosis?

Mr. Granzella: Fibroelastosis.

Dr. Delp: Mr. Dougherty?

Mr. Dougherty: Myocarditis.

Dr. Delp: Mr. Hallewell?

Mr. Hallewell: Fibroelastosis.

Dr. Delp: Mr. Emery?

Mr. Emery: Fibroelastosis.

Dr. Delp: Mr. Attwood?

Mr. Attwood: Fibroelastosis.

Dr. Delp: Mr. Hardy, how do you explain the patient's anemia?

Mr. Hardy: He was at the age for the peak incidence of nutritional iron deficiency anemia. His history showed that he consumed large quantities of milk, but that he had poor solid food consumption, and his reticulocyte response was rapid.

Dr. Delp: Six or eight weeks before his hospitalization the baby developed a skin rash which was diagnosed as measles; do you attach any particular significance to that rash, Mr. Dougherty?

Mr. Dougherty: It probably has some importance because myocarditis often develops after a viral disease.

Dr. Delp: Mr. Attwood?

Mr. Attwood: The rash favors the diagnosis of isolated myocarditis, but I really believe it is an unrelated phenomenon.

Dr. Delp: Mr. Barrett?

Mr. Barrett: In my opinion there is no connection whatsoever.

Dr. Delp: The child apparently had some discomfort which could have been pain; how do you explain that, Mr. Hardy?

Mr. Hardy: There could have been the anomalous origin of the left coronary with the development of anginal pain. There is no certainty, however, that he actually did have pain, and because he was only one and a half years old, his age is against that diagnosis. I believe that his illness caused his irritability and that he reacted by crying out.

Dr. Delp: Mr. Granzella?

Mr. Granzella: Coronary calcinosis may be another possibility.

Dr. Delp: Do you believe that that is what caused the pain?

Mr. Granzella: I am in doubt as to whether he had acute pain or whether he was actually in pulmonary and respiratory distress. If it were pain, I cannot explain it.

Dr. Delp: Mr. Barrett, what is your explanation of the pain?

Mr. Barrett: The fibroelastosis itself could give an angina-like pain. I believe that the pathologist will report an anomalous left coronary artery because it has been reported that an anomalous vessel is almost always associated with fibroelastosis.

Dr. Delp: Dr. Miller, may we have your comments, please?

Dr. Herbert Miller (pediatrician): It was my opinion that the baby cried because he was separated from his mother. It was an irritable cry which improved after a day or two. I would like to emphasize that the death of this baby was a great shock to all of us, as it was certainly not anticipated. I do not believe that he had fibroelastosis because babies with that disease are usually quite sick with rapid respiration, cyanosis, and a high fever. There was no question in anyone's mind that he was not acutely ill. He sat up in bed, and he did not act like a sick child.

Dr. Delp: Thank you. Dr. Wenner, may we have your comments, please?

Dr. Herbert A. Wenner (pediatrician): I do not believe that the skin eruption was associated with the baby's illness. There is no doubt in my mind that he probably had either German measles or regular measles. He might also have had exanthem subitum or roseola infantum, but that is merely a guess because it is somewhat unusual for a 17-month-old baby to have both roseola and rubella. In regard to the virus myocarditis: I believe that poliomyelitis and mumps in particular are indirect consequences of virus attacks. I do not know of anyone who has recovered either poliomyelitis or mumps viruses from the myocardium of a patient who had died of myocarditis. On the other hand, while the baby may have had Coxsackie virus, it would be difficult to prove because most patients with Coxsackie myocarditis die shortly after the onset of the illness. It has been reported that babies with that disease have a sudden onset of pain associated with respiratory distress and a rapid heart rate, and death occurs within two or three days. Little is known about the age incidence of a Coxsackie infection. In our patient's case it is difficult to exclude a virus myocarditis.

Dr. Delp: Thank you. Dr. Diehl, may we have your evaluation, please?

Dr. Antoni M. Diehl (pediatrician): Pericarditis with effusion definitely occurs in children and infants. Although we are not sure that our patient did not have that disease, the apparent normality of the heart tones refutes that diagnosis. It has been commented that the blood flow of an anomalous coronary artery arising from the pulmonary artery feeds the anomalous coronary from the pulmonary, and difficulty may arise because of the closure of the ducts. It is not known, however, in which direction the blood actually flows in the anomalous coronary. It has been postulated that ligation of the anomalous coronary would perhaps be a life saving measure in the disease because it may be acting as an artero-venous fistula with a direct run-off through collateral circulation of the smaller coronary blood vessels.

I do not believe that a hemoglobin of eight to ten grams could account for the cardiomegaly which was seen here. Occasionally a baby with bronchopneumonia goes into cardiac decompensation because of the severity of the pulmonary disease. It was mentioned that babies with fibroelastosis frequently have murmurs. At autopsy about one-half of the children with fibroelastosis had associated congenital heart disease which usually involved the left side of the heart. The fibroelastosis frequently involves the aortic and mitral valve to cause either stenosis or incompetency of the valve with a murmur. Whether or not a murmur is present, however, does not help in making the diagnosis. It is my opinion that the child had a severe, diffuse cardiac disease, the basis of which is unclear to me.

Dr. Delp: Thank you. We will now have the pathologist's report.

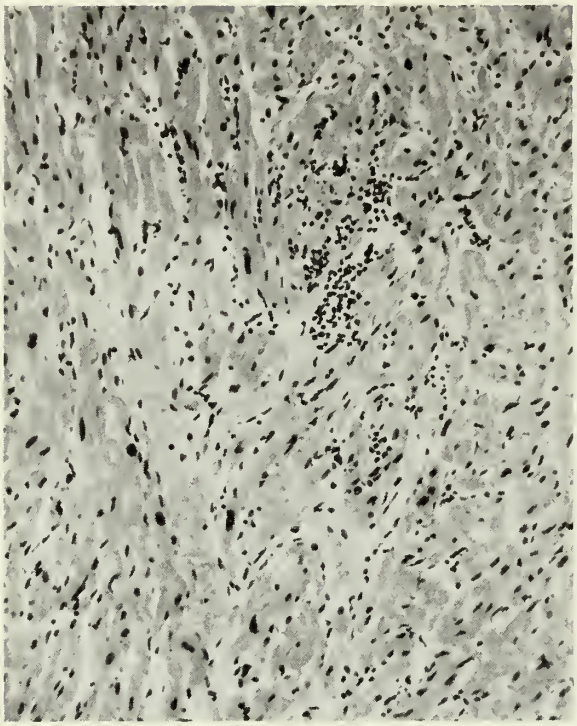

Figure 2. Myocarditis. Focal collections of lymphocytes and hyperemia accompany shrunken myocardial fibers. H and E 175X.

Pathological Report

Dr. Jack K. Frenkel (pathologist): It has been my feeling that, in discussing a CPC, it is more important to be reasonable than to be right. Often one can be both. In regard to Mr. Barrett's statement that he cannot distinguish between myocarditis and fibroelastosis—that is a reasonable attitude to take. I believe that the great frequency with which fibroelastosis is diagnosed here is not altogether borne out at autopsy. Although the disease is recognized more often now than it was 20 years ago because clinicians sensitize us to it, it is not at all rampant. Fibroelastosis has been well described by Mr. Barrett, and I would now like to describe myocarditis, the diagnosis proposed by Mr. Hardy and Mr. Dougherty.

At autopsy the heart weighed 100 gm. which is about twice normal for the patient's age. There was a hydropericardium of 25 ml. There were accumulations of leukocytes and some hyperemia throughout the heart (*Figure 2*). In many foci individual myocardial fibers had lost their mass; they were shrinking and dissolving. There was no real necrotic myocardium as seen in a massive infarct.

In a more advanced stage we had something equivalent to a fibrous scar, occasionally a few polymorphonuclears and lymphocytes. Some polymorphonuclears here accompanied fibrous replacement and focal edema (*Figure 3*).

There was diffuse interstitial pneumonia in the lung. It was not significant, however, and hypoxia is certainly not the basic consideration. In other areas there was some pulmonary edema indicative of cardiac failure.

In another case of myocarditis in a newborn recently seen here the lesions were much more dramatic. Since babies drink a lot of milk and the calcium depositing mechanisms are active, each one of the foci of myocarditis had become calcified (*Figure 4*). In that instance the myositis was fairly widespread and was found in the diaphragm, in the colon and the uterus. The child we are primarily discussing today had no lesion of myositis other than myocarditis.

In the other case (a newborn) there were also lesions with calcification in the provisional adrenal cortex and in the fetal brown fat. I refer to that case because such lesions have been described in Coxsackie virus infection. Our case today may be milder and limited to myocarditis and pulmonary infiltration. In the case of the newborn even glomeruli, tubules and small arterioles were involved by necrosis and subsequent calification (*Figure 5*).

Mr. Barrett: Are you presenting pictures of our case or of another one?

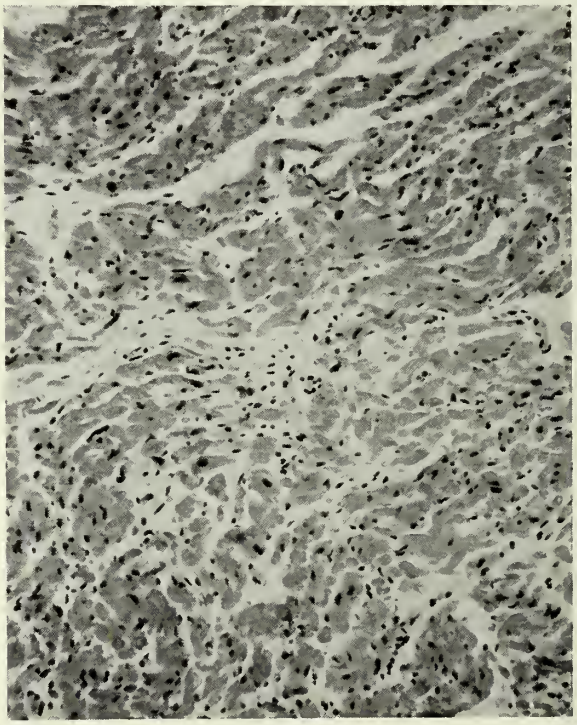

Figure 3. Myocarditis with scarring. Shrunken myocardial fibers are replaced by thick collagen bundles. H and E 175X.

Dr. Frenkel: I am showing pictures of two cases —one, which you discussed, showed only myocarditis and pneumonia, while the other case shows what I believe to be the identical lesions but expressed in a different way in a newborn infant in that calcium has been deposited. The two children died in the same week, and we have not had any such cases for over a year. Tissues were saved in both cases and processed in the microbiology department. Nothing was isolated in monkey kidney tissue cultures, or intracerebral injection of mice, or chorioallantoic or allantoic sac inoculation of chick embryos in the first case; no isolation was made from the heart or the pancreas in the second case. The viral etiology, therefore, is in doubt. On a histologic basis, it is possible that these were both cases of Coxsackie virus myocarditis. One should not overlook the possibility that Leptospira, Spirillum minus and other viruses that cannot be definitely identified could give rise to myocarditis. I have one bone to pick with Mr. Barrett, however, and that is that I do not know why he said that adequate doses of penicillin were given to treat bronchopneumonia. It has always been my impression that one treats the infectious agent, not the expression of the infection.

Dr. Delp: Thank you. Are there any other questions?

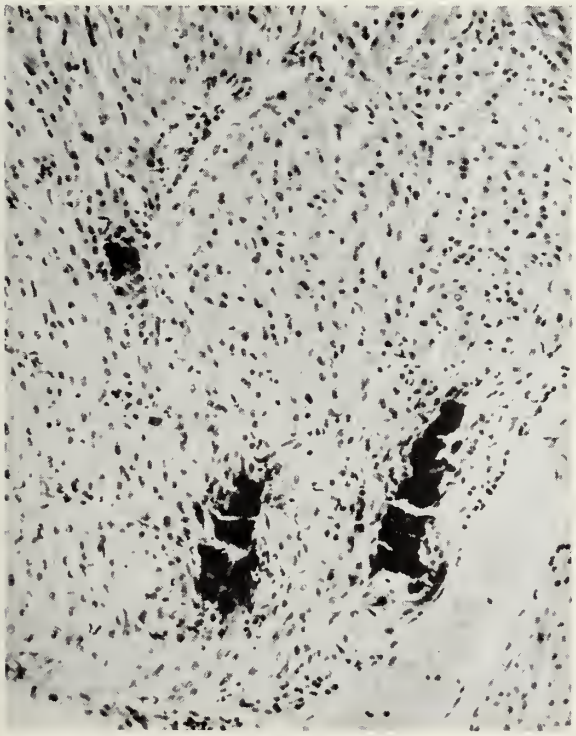

Figure 4. Myocarditis with calcification in a newborn who died in the same week as our patient. H and E 175X.

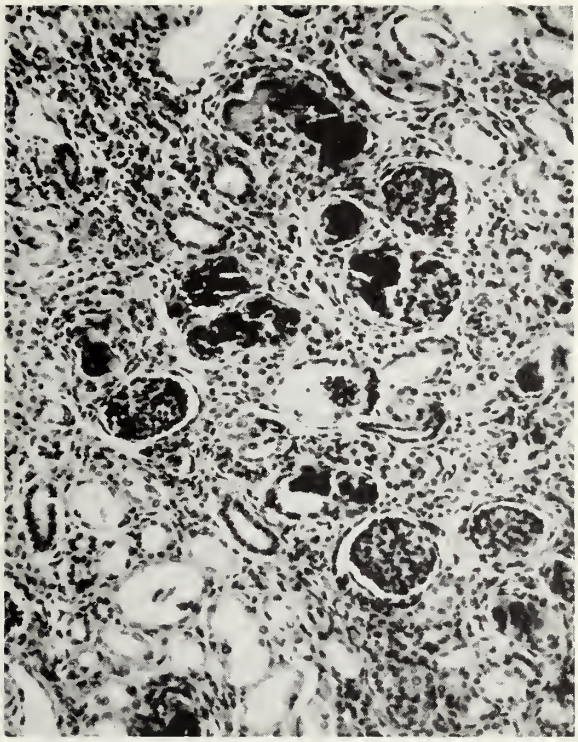

Figure 5. Glomerulonephritis with calcification. Same patient as *Figure 3.* H and E 175X.

Dr. Charles Kendall (resident in medicine): Was this an active myocarditis, or was there evidence of recent activity?

Dr. Frenkel: Both cases were active.

Dr. Kendall: I understand that some cases show no activity in terms of the sedimentation rate, and that it is difficult to identify an active disease.

Dr. Frenkel: Both cases were active, and the host responded with leukocytes. Myocardial cells were still degenerating. Our case was more active than the one with calcified lesions.

Mr. Emery: Was the liver enlarged?

Dr. Frenkel: The liver weighed 340 gm. which is in the normal range.

Dr. Lilia Rodriquez (internist): Was there any evidence of myocardial infarction?

Dr. Frenkel: No, there was not.

Dr. Delp: Were the brain sections of any significance?

Dr. Frenkel: They were non-contributory in either case.

Summary

Dr. Delp: A 17-month-old infant presented initially with anorexia, dyspnea, irritability, and fever. Gross physical findings when first seen suggested pneumonia, and this feature obscured the importance of the enlarged heart. Cardiomegaly in the absence

of evidence pointing to congenital anomalies should raise suspicion of a primary myocardial lesion as found here. But the relative uncommoness of this form of heart disease and its frequent misapplication in the past have made the diagnosis suspect. Pediatricians and virologists have, during the past several years, observed many cases of myocarditis due to Coxsackie virus. Such observations should renew our respect for such a serious clinical entity in child and adult alike, no matter what the etiology.

Pathological Anatomical Diagnosis

Diffuse interstitial myocarditis, with epicarditis, moderate, etiology undetermined.

Hypertrophy and dilatation of the heart, generalized.

Interstitial pneumonitis, slight.

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Student
THESIS

The Zollinger-Ellison Syndrome

DALE DARNELL, M.D., ***Portland***

In 1956, Zollinger and Ellison described an association between recurrent peptic ulceration and nonfunctioning adenomas of the pancreas. In their initial report of two cases, they described a triad consisting of a fulminating ulcer diathesis, gastric hypersecretion, and a non-beta cell tumor of the pancreas. Since their original description, certain additional features have often been found in such cases. These include refractory diarrhea, hypokalemia, and renal failure.[2] The condition is rare. Accordingly, it appears worthwhile to record this present case which illustrates features of both the original and more recently described symptoms.

CASE REPORT: This 46-year-old white female was first admitted to the University of Kansas Medical Center on February 21, 1956 with a chief complaint of nausea and vomiting since June, 1955.

History of Present Illness: In 1947 the patient had an appendectomy following an episode of nausea and vomiting and prior to that had also noticed a gradual onset of diarrhea consisting of four to five watery stools daily. In June of 1955 the patient was in bed for one month because of nausea and vomiting. A barium meal at that time showed a duodenal ulcer. Treatment consisted of a bland diet and Malcogel which relieved the symptoms for approximately six weeks. She then had a recurrence of nausea, vomiting, and diarrhea, and was told she had an enlarged liver. Intermittent dark urine and possible clay colored stools were noted, but no apparent clinical jaundice. There was no history of chills, fever or alcoholism. Her appetite was good, but she had undergone a five pound weight loss. In December of 1955 she was hospitalized at St. Joseph, Missouri because of nausea and vomiting. X-rays of the kidneys, colon, and stomach were said to be normal at that time.

P.M.H., F.H., and R.O.S. were non-contributory.

Physical Examination: Blood pressure 110/60. Pulse 92. General appearance was that of a well developed thin woman in no acute distress. Positive physical findings included slight palmar erythema, a flat abdomen, and a slightly enlarged, tender, firm liver. The spleen was not palpable. There was no fluid wave. There were some nodules along the margin of the liver and a bruit was heard over the liver. Pelvic examination revealed the presence of bilaterally enlarged ovaries.

Laboratory and X-ray: The urine was essentially negative. WBC 9,900 with 58 per cent polys; Hb 13.6 grams; Total circulating eosinophiles 205; Hematocrit 38; Serology negative; Blood sugar 83; Serum electrolytes were within normal limits. BUN 11.2; Glucose tolerance was within normal limits; Gastric analysis showed a free acid of 114 units which went up to 130 units at the end of the third hour specimen. Serum iron 145; Prothrombin time 100 per cent of normal. Skin tests showed a positive reaction for TBC and negative for histoplasmosis. Serum amylase was 312. Serum lipase 2.5. Blood complement fixation for E. Histolytica was negative. Stools for ova, parasites, and blood were negative. Hepatogram was within normal limits. EKG showed a grade 1 A-V block. I-131 uptake was 10 per cent. Barium enema was essentially normal on one occasion,

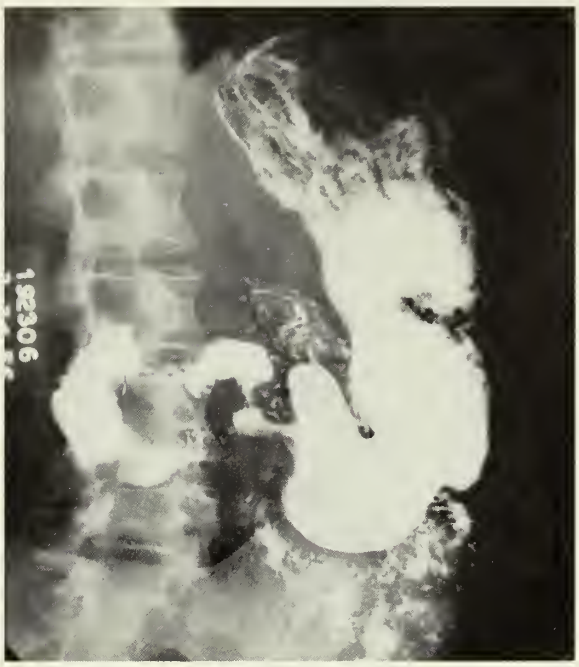


Figure 1. Upper gastrointestinal series showing a peptic ulcer.

however, it was believed to show an organic lesion in the sigmoid on a repeat study. Gallbladder visualization showed no stones. A barium meal showed a duodenal ulcer. *(See Figure 1.)* Chest film and KUB were normal.

Hospital Course: Following admission to the Medicine service, the patient was thoroughly studied. No satisfactory explanation for the bruit over the liver was found but it was believed that the patient could have a hepatic hemangioma.

She was transferred to the surgical service and an exploratory laparotomy was performed on March 5, 1956. A carcinoma of the body of the pancreas was found with metastasis of the liver. A liver biopsy and right oophorectomy were performed. The postoperative course was satisfactory and the patient was discharged on March 16, 1956. The Pathology report showed an islet cell carcinoma of the pancreas. *(See Figures 2 & 3.)*

Second admission July 14, 1958:

C.C.: Weakness, abdominal discomfort, and nausea.

History of Present Illness: Since the previous discharge the patient's nausea had been controlled fairly well with Thorazine®. In May of 1958 she began losing weight and became weaker and was unable to turn herself in bed. She was started on Nilevar® with subsequent improvement in strength and a three pound weight gain. She could walk short distances with help but had to be lifted in and out of bed. She had an acneiform rash on her face and her Nilevar dosage was decreased. Mild tenderness in the right upper quadrant and right thoracic cage was noted.

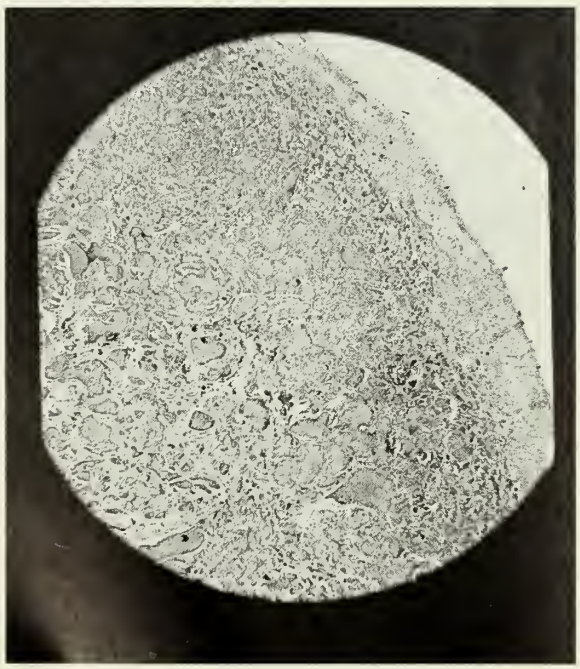


Figure 2. Metastatic tumor nodule in the liver. (×25.)

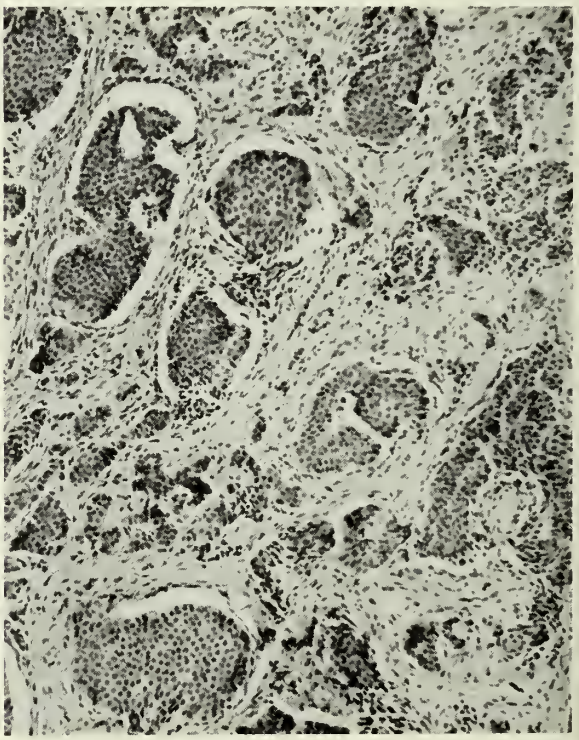


Figure 3. Metastatic tumor nodule in the liver. (×100.)

P.H.: Peptic ulcer associated with mild diarrhea, apparently not active at the present time.

Physical Examination: Blood pressure 115/60, pulse 100 and regular, respirations 18. The patient was cachectic and weak with a slightly distended abdomen and thin extremities. She was alert and cooperative. Examination of the head and neck was unremarkable. The lung fields were clear. There was mild tenderness to percussion over the right lower rib cage. There was a grade II systolic aortic murmur, and a tachycardia was noted. The liver was hard, with many small nodules throughout, enlarged three to four fingerbreadths below the right costal margin with tenderness in the right flank. Several five mm. hard nodules were palpated throughout the abdominal wall beneath the skin. Hyperactive bowel motility and a visible intestinal pattern were evident by inspection. She was moderately distended. The extremities were thin and atrophic and the patient was unable to sit by herself. Plantar flexion was present in both feet. A slight flush of the face and palms was present with a mild acneiform eruption on the forehead.

Laboratory and X-ray: The urine was acid with a specific gravity of 1.015. One plus albumin, negative reaction for sugar, occasional granular casts, and few pus clumps/hpf. Hb. 10.2 grams. WBC 9,450 with 17 per cent polys. Hematocrit 33.5. Platelets 426,000. Repeat Hb. after Nitrogen Mustard was 11.7 grams. Serology negative. BUN 10. Glucose 64. Calcium 4.8. Albumin 3.7, globulin 2.52, phosphorus 1.4 mEq/L, cholesterol 140 with 54 per cent esters. Uric acid 5.5 per cent, direct bilirubin 0.2, total bilirubin 0.4, thymol turbidity 3, alkaline phosphatase 4.5, urine Sulkowich was normal. Ceph. Flocc. negative at 48 hours. Urine 24 hour 17-ketosteroids 2.8 (normal 3-11 mg). Sed rate 20 mm.

Hospital Course: The patient was given a high protein diet, Thorazine 25 mgm q.i.d. and Nilevar, one tablet daily. On July 15, 1958 she was given eight mgm of Nitrogen Mustard intravenously plus Dramamine® 100 mgm and Cortisone® 50 mgm by mouth. This dose was repeated on the next day to give a total of 0.4 mgm Nitrogen Mustard per kilogram body weight. The consultant in Physical Medicine instructed the patient in exercises at home to maintain full motion and muscle strength. Because of the low values for urinary steroids, vomiting and weight loss, a probable diagnosis of adrenal metastasis was made. The patient was discharged to take 10 mgm Hydrocortisone at 8 a.m. and 4 p.m. and to increase her dietary salt. This dosage was to be adjusted by her family physician and she was to continue Nilevar and Thorazine as before. She was also informed that another course of Nitrogen Mustard might be necessary in approximately four months if the blood count and general condition warranted it, and that this treatment could be administered by her local physician.

The final diagnosis at the time of discharge was non-functioning islet cell tumor of the pancreas.

While the above case does not completely correspond to the original syndrome as described by Zollinger and Ellison, it does demonstrate many of the features described by them and later workers. These include: a nonfunctioning islet cell carcinoma with characteristic metastasis, peptic ulceration, elevated free acid in the gastric juice, diarrhea of several years duration, and questionable steatorrhea.

General Discussion

DESCRIPTION OF THE TUMOR AND ULCER

In general, the pancreatic tumors reported have been malignant and located in the body or tail. They metastasize frequently, the most common sites being the regional lymph nodes, liver, duodenum, and peritoneum. They occasionally show areas of cystic degeneration. The cell type has not always been established with certainty, but reports indicate the alpha, gamma, or delta cell predominates. In one case, no distinct tumor was found but rather a diffuse islet cell hyperplasia.[3] Careful study of the pancreas showed a definite increase in the number of islet cells along with a disproportionate increase in the non-beta as compared to the beta cells. This hyperplasia apparently caused the same symptoms as the actual tumors. The exact cell type was not determined in the present case, but at no time was evidence of hyperinsulinism observed.

The ulcers in the stomach and small intestine do not differ morphologically from the common peptic ulcer.[4] The incidence of ulcers situated in the jejunum is much greater in this syndrome than is usual with uncomplicated peptic ulcer. The reason for this is not known. The jejunal ulcers are usually small, solitary, and are not accompanied by other pathologic changes in the small intestine.[5]

MECHANISM OF ULCER PRODUCTION

It is generally believed that chronic peptic ulceration occurs only in tissues exposed to the combined action of pepsin and hydrochloric acid.[6] Dragdstet, in 1942, showed that tissues transplanted from many sites so as to have their surfaces in direct contact with gastric contents did not undergo peptic digestion. He further showed that this was due to the presence of neutralizing substances, namely gastric and duodenal mucus, pancreatic and duodenal juice, and bile. However, when these same tissues were placed in direct contact with pure gastric juice digestion occurred, not only of the transplanted tissue but of the gastric mucosa itself. It therefore follows that

if an excessive production of gastric juice cannot adequately be neutralized, the gastric mucosa undergoes peptic ulceration. This results in the formation of multiple ulcers, not only of the stomach and duodenum but also of the jejunum.

In the cases reported by Ellison the amount of gastric secretion varied from 980-3,170 cc. in a 12 hour period while Donaldson reported a case with a total secretion of nine to 12 liters per 12 hour period. The total free acidity ranged from 66-308 mEq, but in almost every instance where secretory studies have been done, the total free acid has exceeded 100 mEq as contrasted to the normal value of 18 mEq/liter. The explanation for this hypersecretion remains obscure and bears no relationship to the pancreatic tumor. This volume of acid gastric secretion entering the small intestine might be suggested as a possible cause of the jejunal ulceration.

Poth *et al.* showed that by merely diverting the pancreatic secretion from the gastrointestinal tract many duodenal and jejunal ulcers could be produced in experimental animals. On the other hand, he also showed that the number produced could be reduced by simultaneous extirpation of the pancreas. Ellison in 1956 demonstrated this relationship clinically by doing pre- and post-operative gastric secretion studies on one of his patients. A vagotomy was first done after which the 12 hour secretion dropped from 2,150 cc. with 129 mEq free HCl to 800 cc. with 55.8 mEq free acid. After pancreatectomy, repeated examination showed less than 200 cc. with no free acid present.

The only work to establish a direct relationship between the pancreatic tumors and peptic ulceration appeared in the original paper by Zollinger and Ellison. They postulated that the causative agent was glucagon, or the hyperglycemic-glycogenolytic factor. They attempted to prove their theory by serum paper electrophoretic studies on one of their patients, after having previously determined the normal electrophoretic pattern of purified glucagon. They were able to demonstrate a fraction, designated by them as fraction five, that had the same migratory pattern as purified glucagon. When this fraction was eluted from the paper and injected into anesthetized cats it caused an elevation in the blood sugar. Their theory was that increased blood sugar levels led to increased production of insulin with resultant ulcer formation. These studies were done on a patient with empyema, and after his recovery they were unable to reproduce their original results. Other workers have also attempted this same procedure without success. Peptic ulceration is rarely seen in patients with hyperinsulinism secondary to functioning pancreatic adenomas.[12] It is, however, a rather common occurrence in patients experiencing frequent episodes of insulin shock.[13] This leaves open the possibility that elevated levels of insulin can work in the same manner without causing hypoglycemic episodes. It is conceivable, but improbable, that the failure to reproduce the above results is due to the irregularity with which endocrine tumors are known to elaborate their secretions. It is also possible that the substance originally isolated by them was not glucagon, since it has been shown that glucagon is neither ulcerogenic nor a gastric secretory stimulant.

Etiology of Diarrhea, Hypokalemia, And Renal Shutdown

In addition to the triad that comprises the original Zollinger-Ellison syndrome, a report by Verner and Morrison has appeared recently, describing the features of diarrhea, hypokalemia, and death from renal failure. These were all associated with an islet cell tumor of the pancreas. These authors reported two cases in their own series and reviewed seven others. All of these were found to have persistent diarrhea associated with an islet cell tumor. In their own cases and in another reported by Preist and Alexander, the hypokalemia was well documented by repeated serum potassium determinations. The low serum potassium was evidenced by vacuolar changes in the renal tubule as previously described by Relman and Schwartz. It has long been known that severe diarrhea can cause potassium depletion, but the possibility of a substance produced by the pancreatic tumor causing the low potassium or the diarrhea cannot be excluded.

The watery nature of the diarrhea has been attributed to increased production rather than poor absorption. The over-production theory is even more tenable in view of the fact that there was no apparent defect in fat absorption. In contra-distinction Maynard and Point have reported a case that was treated for "malabsorption syndrome" for five years before an islet cell carcinoma was discovered at laparotomy. They postulate that the steatorrhea may be caused by 1 decreased gastric pH with subsequent inactivation of the pancreatic enzymes, 2 hypersecretion of the small bowel, suggested by abnormal x-ray findings, or 3 pancreatic insufficiency secondary to tumor invasion. As yet, no clinical or experimental work has appeared to substantiate any mechanism that might explain the steatorrhea.

Other Endocrine Changes

The observation that certain hormones in excessive amounts can cause peptic ulceration has led to the search for other endocrine gland tumors in conjunction with the pancreatic tumors. In a significant number of cases of Zollinger-Ellison syndrome, multiple endocrine tumors have been found. The glands

most commonly involved are the adrenal, parathyroid, and pituitary. It has been known for some time that the adrenal glucocorticoids in large doses can cause peptic ulceration when administered in therapeutic amounts. In a review of 21 cases of the Zollinger-Ellison syndrome by Donaldson *et al.,* six were found to have not only a pancreatic adenoma, but also adrenal hyperplasia or adenomatosis along with adenomas of the parathyroid and pituitary glands. The association between hyperparathyroidism and peptic ulceration has long been known although the exact mechanism has yet to be elucidated.

Clinical Symptoms and Therapy

The clinical features, as might be expected, are many and varied. The majority of patients are females ranging in age from the late teens to the seventh decade. The most common age is the fourth to the fifth decade. The prevalent presenting complaints are epigastric pain with back radiation, weight loss, nausea, vomiting and black tarry stools. Recent reports indicate that diarrhea and steatorrhea can also be initial complaints. Study of these cases show that diarrhea may be much more common than was previously believed. In the case reported by Donaldson, diarrhea was not only the presenting complaint but persisted throughout the illness until death. Potassium determinations were done on the five days preceding death, the lowest value being 4.0 mEq/liter. At that time the correlation between diarrhea, hypokalemia, and renal shutdown was not known. One of the two original cases reported by Zollinger and Ellison had diarrhea for eight years.

Another characteristic of these patients is their refractoriness to adequate medical or surgical therapy. Characteristically these patients are refractory to antacid therapy. By the same token, surgical therapy short of complete gastrectomy is just as ineffective.

The correlation between two apparently different symptom complexes having the same common denominator, a non-functioning islet cell tumor of the pancreas is difficult to make. The overlapping of symptoms indicates the definite relationship between the two entities. It is possible that different cell types of the tumors may cause a predominance of one set of symptoms over the other. It is also possible that the entire clinical entity may be due as yet to an unidentified factor. Whatever the etiology may be, all cases of refractory peptic ulcer or diarrhea that come to surgery should be explored for tumors of the pancreas.

Conclusion

The case reported does little to add to our basic knowledge of the syndrome. No other endocrine tumors were discovered. The most that can be said is that it further supports the view that non-insulin secreting tumors of the pancreas clearly possess physiological function which is related to the integrity of the gastrointestinal tract.

Summary

The Zollinger-Ellison syndrome is discussed with emphasis on recently described clinical symptoms which may be features of this disease. A case is presented which the author believes illustrates some of the original and some of the more recently described signs and symptoms. The exact etiology of the disease remains obscure, but this syndrome should be suspected in every case of refractory diarrhea or peptic ulcer, especially of the small bowel.

University of Oregon Medical School Hospital
Portland, Oregon

Editor's Note: References may be obtained by writing the JOURNAL of the Kansas Medical Society, 315 W. 4th Street, Topeka, Kansas.

New Chemicals—Compounds Cause

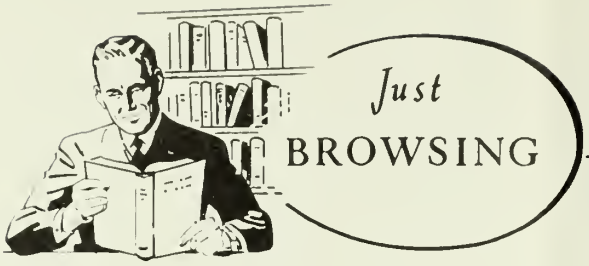
Industry, with its constantly increasing production of new compounds and chemicals now being introduced at the rate of one every 24 minutes, runs the risk of exposing workers "to new and unknown carcinogens."

This warning is sounded in the current issue of *Patterns of Disease,* prepared by Parke, Davis & Company for the medical profession.

New products and methods of production should be carefully studied in order to guard workers against such harmful exposure.

Substances currently recognized as causing occupational carcinogens include arsenic, benzol, chromates, creosote, and ultraviolet rays. Those suspected include aromatic organic chemicals, asbestos, benzol derivatives, chlorinated hydrocarbons and coal.

Skin is involved in 75 per cent of occupational carcinogen cases, bladder in 15 per cent, and lung, bone, paranasal sinuses, and larynx in 10 per cent. Usually, an exposure period of many years occurs before development of cancer.



Often the original descriptions of diseases remain classical in their direct, unequivocal statements, with vivid portrayal of symptoms and physical findings. This is the case with the article on "Splenomegaly with Cirrhosis of the Liver," by Guido Banti, published in 1894.

"The disease sets in [pre-ascitic stage—Ed.] with splenic hypertrophy, which progresses in an insidious manner, so that when it is noticed by the patient or his physician, the spleen has usually attained a considerable size. The spleen, though hypertrophied, retains its normal shape; it descends four or five fingers' breadth below the last costal arch and sometimes as far as the iliac crest; its anterior border frequently reaches the median line. . . .

"Anaemic symptoms follow upon tumefaction of the spleen and consist, as a rule, in increasing debility, with pallor of the skin and mucous surfaces, dyspnoea and palpitation consequent upon the slightest effort, etc. No gastrointestinal disturbances; appetite good and no emaciation.

"Anaemic murmurs are constantly present in the cardiac region. They are systolic and their maximum intensity is found in the auscultation area of the pulmonary orifice. . . .

"The liver presents no modification in size, and is not tender to pressure. There is no trace whatever of collateral venous circulation on the abdominal walls.

"The anaemic symptoms are subject to temporary amelioration, but never disappear entirely. During these periods of amelioration, the spleen remains as large as before, or at best the diminution in size is so small as to be barely perceptible. In the cases with which I have had to deal, the pre-ascitic stage varied in duration from one year to four years and a half.

"The intermediate stage is characterized by the appearance of dyspnea, intestinal disorders, and sometimes haemorrhoids. At the same time the urine grows scantier, dark-red in colour, and rich in urates. This stage lasts a few months.

"In the ascitic stage a liquid effusion takes place into the peritoneum. This liquid is serous, lemon-coloured, and its average specific gravity is 1.011 or 1.012. The liver appears to be smaller than under normal conditions; the urine is scanty, with density of from 1.030 to 1.035, and contains a great deal of urates and urobilin. The anaemic symptoms become more and more marked; but the examination of the blood continues to give evidence of a normal number of leucocytes. This stage lasts from seven to eight months and ends in death.

"The anatomo-pathological changes are the following: The spleen is uniformly enlarged in size and may weigh as much as 1 or 1½ kg. The capsule is thickened, but the surface of the organ is smooth. Microscopical examination of the splenic juice shows complete absence of nucleated red corpuscles. In specimens prepared by hardening, the Malpighian corpuscles are found to be sclerotic, being gradually transformed into connective-tissue nodules. . . .

"The bone marrow is red, presenting the appearance of foetal marrow, and contains a large number of nucleated red blood-corpuscles.

"The aetiology has nothing to offer us but negative information. None of my patients had a history that was in the least suspicious. They were endowed with a good constitution, and had never suffered from syphilis, malaria, or other infectious diseases. They lived in healthy localities, were not exposed to infection, were not heavy eaters, and some even might be described as vegetarians. In not a single case was there any evidence of intemperance in the use of wine or alcoholic drinks."—(O.R.C.)

The President's Message

Dear Doctor:

For many years I have wondered just how one would feel assuming the great responsibilities of the office of president of any worth-while organization. Now I know, for becoming president of the great Kansas Medical Society, I find myself awed at what lies ahead, especially following our past presidents who have accomplished so much and furthered the aims and ideals of our Society.

Never has there been a time when the practice of medicine has become so involved. We no longer can move in the circle of medicine independently but we must move as a group. It is our sworn duty to protect the public's health and to further the practice of better medicine.

Medicine has an ideal and a responsibility to protect, so let us of the medical profession get together and in one great effort solve the problems that lie ahead.

I am in hopes that each member of the Medical Society will realize that the Society is just as good as the members make it. We, the officers, wish to carry out your directives.

I wish to thank all of the chairmen of committees who have so graciously accepted and also I wish to thank the members of the committees who have so kindly accepted. The committees are the backbone of our Society. They spend many hours in bringing many loose ends of medicine together to make workable plans.

Cordially Yours,

President

The Comprehensive Educational Survey of Kansas

The Comprehensive Educational Survey has recently been completed for the Education Committee of the Kansas Legislative Council. This survey was inclusive and enlisted the aid of many Kansans during the past year. There were three, 35-man advisory committees for Primary and Secondary Education, for Higher Education and a Professional Advisory Committee for Higher Education. In addition, there were committees in each county who met and discussed the problems proposed by the Advisory Committees. Altogether it has been estimated that more than 4,000 Kansas citizens were engaged in wrestling with the vital problems of their schools.

Kansas physicians have traditionally been concerned with education. They rightfully have been respected for their erudition and culture and as a result many of our members (and their wives) have served long and effectively on Boards of Education throughout the State. We also reflect in the honor achieved by Doctor Murphy and Doctor Wescoe in successively filling the highest educational office in the State.

Thus, it may come as a surprise to many of us that we serve an appallingly meagre educational fare to our children these days. In 1960 many a six-year-old is attending school under much the same circumstances as his counterpart in 1860.

When you read the report you will find among other surprising data, that there are 2,800 school districts in Kansas; 1,900 of these operate only an elementary school and 318 operate no school at all. There are 567 districts maintaining high schools and of these 433 have fewer than 150 pupils. Less than ten per cent of all districts operate both elementary and secondary schools. There are 227 high schools enrolling less than 60 pupils, of these only three were accredited by the North Central Association. Is this equality of education? There are 284 high schools who have fewer than six teachers. Is this quality education? In a typical four-teacher high school 13 subjects are offered, in a good class A school system (Dodge City) 56 subjects are offered.

Equally shaking are some of the data concerning elementary schools. In 1959, there were 1,004 one-teacher schools enrolling 13,000 pupils. Also in 1959, there were 1,028 schools enrolling 18,000 pupils which were limited to eight month terms, thereby neatly robbing 18,000 pupils of one year of school each during their school life. How does this measure against our professed aim of equal opportunity for all?

To further complicate our problem the statisticians have predicted that the school population will increase from 430,000 to 530,000 by 1970; in hard terms 100 ordinary school buildings or 1,700 classrooms. Our estimate of what it takes to be an effective teacher also leaves something to be desired. Of 13,000 elementary teachers 5,000 did not have a degree. By 1970, 6,000 or 30 per cent of our 20,000 teachers will retire and must be replaced. The replacement will not be made easier by the fact that Kansas ranks 33rd in the average salary of her teachers. Three-fourths of the states pay better salaries.

Financing public education is the constant dilemma, but that it can be done better is evidenced by the statistic that per-pupil cost in high schools of 100 pupils and under is $802.00, while equivalent cost per pupil in high schools of 150 plus is $394.00—equality in cost is no more true than equality in opportunity.

The source of taxation in Kansas for schools is 24 per cent from school district and county funds, 22 per cent from the State and three per cent from Federal funds. Kansas ranks *seventh* in states in the amount of money taken from property tax, the national average being 54 per cent. But hear this: the assessment ratio varies from 13 to 42, and it varies from rural to urban within the same county. The

report indicates that $266,000,000 will be needed in 1970 as compared with $145,000,000 in 1959.

Referring to school districts again, the report places Kansas again in that unenviable seventh place with 2,790 districts, the national mean being 300 or less. In addition, Kansas is almost unique in operating separate elementary and high school districts.

The report goes into some detail concerning the State Superintendent of Instruction and his counterpart the State Superintendent of Vocational Instruction, as well as their respective State boards. The situation is archaic, and everyone knows that these functions should be coordinated under *one* State Board of Education with *one appointed* State Superintendent of Instruction of sufficient stature to provide the type of supervision needed.

The County Superintendency is another dish and, as anyone who has been in a County Superintendent's office lately knows, this poor political orphan should be abandoned to his cruel fate.

Transportation of pupils is a costly business. Kansas in this field ranks sixth from the highest in the per-pupil cost of transportation. This is a reflection of the myriad school districts and our position would naturally improve with the reduction of competing districts.

A survey is not of much value unless from it we are able to draw conclusions, and therefore recommendations to correct the educational deficiencies of Kansas. I shall try to summarize the recommendations briefly.

The general agreement among all of the survey committees was that their aim should be, "A quality education with equality of opportunity for all the school children of Kansas." Thus, the following recommendations:

1. Organization of School Systems:

Elementary and secondary education combined under one system to include kindergarten through 12th year, to include *not less than* 1,200 pupils.

2. School District Reorganization:

Reorganization under legislative fiat to meet the requirements of No. 1. If this coincides with county lines, the county would be a convenient unit. Each plan should be approved by the State Board of Education.

3. Financial Support of Schools:

The State support to be increased from 22 to 40 per cent.

A foundation program for distribution of funds could be established if equalization of assessment were done at the same time.

4. State Administration:

The Office of the State Superintendent to be changed from elective to an appointive position subject to the State Board of Education.

5. County Superintendency:

To be abandoned and replaced by an area superintendent over 10,000-15,000 pupils and responsible to the State Superintendent.

6. Securing Adequate Supply of Well Trained Teachers:

Continued emphasis on recruitment, increased salary and position and maintenance of high quality and high qualifications of present staff.

7. Transportation of Pupils:

Should include all children beyond reasonable walking distance; should be part of State aid program and all such transportation under close supervision.

8. Textbooks:

To be free, as the rest of our educational services are free, to all.

These recommendations were met with fear and foreboding on the part of many people, the most frequently expressed fear was that "our nice new high school will be abandoned." This is, of course, absurd. All of the existing classrooms and many new ones will be needed. It is true that the one-room school will go, as it should have gone with the model T, and some buildings will be put to different uses as pupil population changes, but not abandoned.

We believe that it is in the interest of every physician in Kansas to read this report, to urge its acceptance and make certain of its implementation by the next session of the Legislature.

Richard Greer, M.D.

World Medical Association

A special committee has been recently appointed with Dr. L. S. Nelson, Sr., Salina, designated as its chairman. This committee, however, is not one of the Kansas Medical Society but is Kansas' representation to the United States Committee in the World Medical Association. The WMA which is housed at 10 Columbus Circle, New York 19, New York, is a growing organization of physicians from the four corners of the earth. Other Kansas physicians which have been appointed to this committee are Drs. Grant Hastings, Garden City; Ray Gelvin, Concordia; C. Omer West,

Kansas City; Murry Eddy, Hays; and Charles Vestle, Humboldt.

Dr. Nelson, speaking for the Kansas Committee, urges that the association needs members and support, both personal and financial, from more Kansas doctors. The World Medical Association grew out of the strife of the second world war and is actively taking a part in promoting peace and better health for all nations. During World War II, doctors of all the allied nations congregated from time to time at the British Medical Association house. Typical of doctors the world over, they spent considerable time discussing problems of medical practice in peace time and comparing the conditions of medical service and medical education in the various countries. Hence, it was natural that in 1945 British Medical Association should call an informal conference of doctors from several countries which decided to initiate plans for an international organization. An organizing conference representing 29 national medical associations supported the constituting of the World Medical Association and by the fall of 1947, the Conference of Delegates adopted the constitution and bylaws of the new international organization—a confederation of the most representative national medical association of each country based upon equal voting power for each member association. The objects of this new association were designed to promote world peace through assisting all peoples of the world to attain the highest possible level of health by promoting closer ties among the doctors of the world —on the personal as well as scientific interest level— and to provide an audible voice for the practicing doctors of the world at the international level.

The first important "finding" of the World Medical Association was that the language of medicine is universal. An excellent example of this was evidenced by the constitution as drafted by the British Secretary underwent grammatical amendments of the English by Swedish delegation.

The Voice of Medicine

This is the voice of world medicine, come of age, a voice with authoritative tone. WMA's cry against oppression in Hungary is the mature call of a young adult born out of the ferment of World War II. Doctors from many nations were thrown together in the common missions of that great conflict over a decade ago. Their wartime brotherhood in arms suggested the values of a permanent international alliance of organized medicine. These physicians also felt the need to restate medicine's universality, and to express their independence of political compulsions. There was a need, too, to assert a solidarity in repudiating the perverted medical practices which were forced against some physicians in Nazi concentration camp. (Based on a 1948 "Declaration of Geneva" WMA physicians pledge: "I will retain the utmost respect for human life from the time of conception; even under threat I will not use my knowledge contrary to the laws of humanity.")

When The World Medical Association speaks today, it is heard as the official voice of the practicing profession, listened to by such diverse global agencies as the International Labour Office, International Social Security Association and the World Health Organization.

Other Programs

It would be a mistake to regard WMA as a lobby bent only on fighting the evils of socialized medicine. Other efforts outshine its role as an alarm-ringer and fighter for unfettered medical practice. One is the drive for a Central Repository for Medical Credentials. Another was the adoption of a modernized Hippocratic Oath, as well as an International Code of Medical Ethics. Already successful in some South American countries, WMA is continuing to help in the establishment of national medical associations elsewhere throughout the world. Currently, it is:

- Promoting a freer international flow of proved therapeutic agents.
- Formulating principles of cooperation between practicing physicians and public health officers.
- Promoting medical research.
- Observing and reporting on the activities of more than 23 other international organizations as they affect the practice of medicine.

Need for Periodic Examination

The importance of periodic examinations, as an important contribution to occupational health, is underscored in *Patterns*. It reveals that "in spite of variations in examinations, at least 15 per cent and as many as 40 per cent of persons examined are found to have a significant disease or defect previously unknown." Disorders found most frequently in periodic examinations include obesity, arthritis and rheumatism, hypertensive disease, arteriosclerotic heart disease, and hemorrhoids.

The value of safety programs is also emphasized. "During the period 1926 to 1954, the national industrial accident frequency was reduced by 75 per cent; absenteeism rates were cut in half; compensation rates were reduced by two-thirds; and accident-sickness costs were decreased by 40 to 50 per cent.

A major reason for this changing picture is "the application of preventive medicine to "industry" with the subsequent emergence of more industrial health and safety programs.

Highlights of Hutchinson

A Short Summary of the 101st Annual Meeting

The 101st Annual Meeting of the Kansas Medical Society recently held in Hutchinson at the Baker Hotel had more than 375 physicians register for its sessions. The Reno County Medical Society was the host of the May 2, 3, and 4 meeting with Dr. J. L. Perkins as general chairman. The 1960 meeting followed the format as set forth in the Society's By-Laws. This year due to a lack of space there were no technical or scientific exhibits.

First House of Delegates

The gavel sounded—the first House of Delegates was called to order by the president, Dr. Glenn R. Peters. This was the official opening of the 101st Meeting. Following a 7:30 a.m. Monday, May 2, breakfast, the 56 delegates, 10 councilors, seven officers and 10 past-presidents attending the meeting at the Town Club heard 60 resolutions presented. As is the order of business, the first session of the House of Delegates is to only hear and present the business of the Society through resolutions, therefore, no final action was taken on any of these proposals. There was, however, one exception to this rule. The House voted to amend the By-Laws and conducted one item of special business. They voted to present at the Annual Banquet Tuesday night an Outstanding Service Award to Dr. Franklin D. Murphy, Chancellor of the University of Kansas. This was passed unanimously by the Delegates.

First General Session

Following registration, the scientific meeting was held in the Baker Hotel Grand Ballroom. Dr. V. R. Moorman, president of the Reno County Medical Society, presided over this session. The first speaker of the day was Dr. Theodore C. Panos from Little Rock. His topic was "Nutritional Requirements of the Neonate." He was followed by Dr. S. W. Kirklin, Rochester, who spoke about "Open Intracardiac Surgery." Later the two men participated in a panel.

Sporting Events

This year's sporting events enjoyed a good turnout. The day offered a choice of golf at the Prairie Dunes Country Club and trap and skeet shooting at the Ark Valley Rod and Gun Club. Participants in the Golf Tournament remarked about the fine course offered by Prairie Dunes and the shooters said the clay birds were challenging. The Annual Sports Awards Dinner was held at the Country Club that evening. Many excellent trophies were presented to the winners in both competitions.

The Second General Session

Dr. John N. Blank opened the Tuesday morning meeting and introduced Dr. Jesse E. Edwards from the Mayo Clinic. He spoke about "Clinical Pathologic Correlations in Coronary Atherosclerosis." The next scientific speaker was Dr. Eliot E. Foltz, Winnetka, his topic was "Diaphragmatic Hernia." Following the two speeches both speakers participated in an active panel discussion.

Tuesday afternoon was reserved for the specialty group meetings. Also the reference committee of the House of Delegates met and discussed all of the resolutions that had been presented the day before. All physicians were invited to air their views on any subject under discussion by the committee.

The specialty groups that conducted meetings were: The Obstetricians and Pediatricians which held a joint meeting with noted speakers from across the nation; the E.E.N.T. specialists and the Radiologists met jointly with The Kansas Society of Medical Technologists for a program; and the Chest Physicians held a scientific meeting.

Annual Banquet

A host of gifts were presented to Dr. Peters as he presided over the annual banquet Tuesday evening. More than 250 physicians, wives, and guests were on hand to enjoy the show. Dr. W. Clarke Wescoe after delivering what he called his "Swan Song" as the dean of the Medical School before assuming the Chancellorship of the University of Kansas, humorously commanded the microphone and proceeded to call individuals from the audience who lavished praise and presents upon Dr. Peters for an outstanding year. One of the gifts towered over him as it stood on the table.

On the more serious side of the night a plaque was given to Dr. Franklin Murphy, present Chancellor of K.U., honoring him with an Outstanding Service Award. The award was given to Dr. Wescoe since Dr. Murphy was unable to attend the dinner because of previous engagements.

Dr. Peters then administered the oath of office to Dr. F. E. Wrightman, the incoming president of the Society. It is the custom to administer the oath at the banquet, but he doesn't take office until after the final House of Delegates. Dr. Wrightman expressed his thanks to the audience and the Society for the honor and trust they had bestowed upon him by choosing him to represent them this next year. He in turn presented to Dr. Peters the past-president's key. Dr. Peters spoke briefly of the pleasure it had been to serve the Society this year.

The entertainment for the evening was the "Spirit of Kansas." This was given in song by a chorus from Wichita. It was composed of a male and female quartet and thrilled the audience with their songs centered around the 100 years of Kansas. Many old favorites were blended to tell the story of Kansas' past, present, and future. The group was commissioned by the State to present this program depicting Kansas for its 100th

(Continued on page 319)

This Year It's Miami

109th Annual A.M.A. Meeting

THE 109TH ANNUAL MEETING of the American Medical Association will be a forum presented by some of the nation's top scientific brains.

Approximately 2,000 physicians, all outstanding in their field, will participate in presenting the scientific program of the meeting to be held in Miami Beach, June 13-17.

There will be two general scientific meetings in the Grand Ballroom of the Fontainebleau Hotel, and other lectures, symposiums, and panel discussions in the Fontainebleau, Eden Roc Hotel, and in the new, air-conditioned Miami Beach Exhibition Hall. Sessions on dermatology, being held jointly with the Society for Investigative Dermatology, will be in the di Lido Hotel.

The opening general scientific meeting, Monday afternoon, June 13, will begin with the Joseph Goldberger Lecture on Clinical Nutrition. Dr. Carl A. Lincke, chairman of the A.M.A. Council on Scientific Assembly, will preside at this meeting.

The lecture will be followed by a symposium on nutrition, including an address by Grace A. Goldsmith, professor of medicine, Tulane University School of Medicine, New Orleans, on "Highlights on the Cholesterol—Fats, Diets and the Atherosclerosis Problem."

The second general meeting will be a symposium on "Evaluation and Preparation of Patients for Anesthesia and Surgery," Tuesday morning, June 14, to which the sections on Anesthesiology, Diseases of the Chest, General Practice, Internal Medicine, Pediatrics, Pathology and Physiology, and Surgery have contributed.

Section Programs

What's new in surgery will be explored during a symposium and panel discussion on Wednesday morning. The program was developed from suggestions obtained from a survey of the heads of departments of surgery in the nation's medical schools.

The symposium will be on "Recent Advances in Treatment of the Cancer Patient" with an introduction to the problem including methods of decreasing spread of cancer cells during operations being presented by Warren H. Cole, Chicago. Dr. Cole also will serve as moderator of the panel on "Current Status of the Treatment of Advanced Cancer of the Thyroid and Breast."

Arthur M. Master, New York City, will speak on "Effort, Occupation (including physicians) in Coronary Occlusion" during a symposium on Medical Chest Emergencies, and John F. Briggs, St. Paul, Minn., will discuss "Pulmonary Embolism."

John H. Moyer, Philadelphia, will moderate a symposium on "Edema—Its Physiology and Use of Newer Diuretics in Its Treatment." Irving S. Wright, New York, will moderate a symposium on "Pathogenesis and Treatment of Thrombo-Embolic Phenomena." Daniel C. Moore, Seattle, Wash., will take part in a session on "Newer Trends in Diagnosis and Treatment" discussing "Oxygen—the Rational Therapy for Systemic Toxic Reaction From Local Anesthetic Drugs."

There will be panel discussions on "Tumors of the Trachea and Bronchial Tree," with Paul H. Holinger, Chicago, moderator, and one on "Disseminated Diseases of the Chest," with Harold O. Peterson, Minneapolis, moderator.

Highlights of Other Sections

Nervous and Mental Diseases—E. S. Gurdjian, Detroit, "Critique of Occlusive Diseases of the Carotid Artery and the Stroke Syndrome." Leo H. Bartemeier, Baltimore, "Comments on the Relation Between Psychiatrists and Other Physicians."

Obstetrics and Gynecology—Stirling G. Pillsbury, Long Beach, Calif., "31,595 Deliveries With One Maternal Death." Jerome M. Kummer, Santa Monica, Calif., "An Answer for Criminal Abortion."

Internal Medicine—"Symposium on Hypocholesteremic Drugs." Walter L. Palmer, Chicago, "The Billings Lecture: Causality in Peptic Ulcer." Rudolph H. Kampmeier, Nashville, Tenn., "Collagen Diseases—Some Unanswered Questions."

Laryngology, Otology, and Rhinology—George A. Sisson, Syracuse, N. Y., "Problems and Complications in Head and Neck Surgery." C. M. Kos, Iowa City, Iowa, "Five Year Results of Stapes Mobilization and Current Results With Vein Plug Stapedeoplasty."

Preventive Medicine—Jan H. Tillisch, Rochester, Minn., "Medical Aspects of Safety in the Air." Robert B. Stonehill, San Antonio, Texas, "Air Travel and the Cardiopulmonary Patient," a film presentation.

Orthopedic Surgery—Sidney Keats, Newark, N. J., "Surgery of the Extremities in the Treatment of Cerebral Palsy." H. R. McCarroll, St. Louis, Mo., "The Management of Complicated Ununited Fractures of the Tibia and Fibula."

Pediatrics—Leonard S. Sommer, Miami, moderator, "Symposium on Congenital Heart Disease—Present-Day Status From Viewpoint of Practitioner of Medicine."

The section on Miscellaneous Topics will feature

a half-day session on the "Management of the Older Patient." Participants include Philip Thorek, Chicago.

Exhibits Number 290

About 290 exhibits will be on display in the Miami Beach Exhibition Hall, representing the most outstanding exhibits selected from 540 applications.

A new special exhibit on Body Fluid Disturbances, offering a complete course in body fluids, will be presented in its entirety on two days. Different aspects will begin at specific times to permit physicians to attend only those parts in which they are particularly interested.

A special exhibit on fractures will include booths on fractures of the ankle, hip, wrist, tibia and fibula, children's fractures, and fractures resulting from falls on the outstretched hand. About 50 prominent orthopedic surgeons will take part in the demonstrations at this exhibit.

Specials on Pulmonary Function and Fresh Tissue Pathology also will be highlighted in the Scientific Exhibition area.

An outstanding program of motion pictures and television, which will be coordinated with the rest of the scientific program, will be presented also in the Miami Beach Exhibition Hall.

Be sure to get your reservations early.

Miami Beach, the fabulous Florida resort center, becomes the site of the 109th Annual Meeting of the A.M.A. on June 13-17. The scientific meeting will take place in the beautiful Fontainebleau Hotel and in the completely air-conditioned Miami Beach Auditorium, located a short distance from ocean front hotels.

UNIVERSITY OF KANSAS MEDICAL CENTER

RAINBOW BOULEVARD AT 39TH STREET
KANSAS CITY 12, KANSAS • TA 2-5252

F. E. Wrightman, M.D., President
Kansas State Medical Society
Sabetha Clinic
Sabetha, Kansas

Dear Dr. Wrightman:

In a few weeks, I will be leaving Kansas, and after ten years of happy association with the physicians of this State, I would not want to leave without in some manner expressing my warmest regards to not only the Society, but to the several hundred practicing men that I know personally. Our Society and our Medical School have enjoyed a unique friendship based on mutual respect and understanding. The School has grown vigorously in these ten years and to a great extent this has been possible because Kansas Medicine understood the need of this School and supported its ambitions. With its increasing capabilities the School has been able to train more physicians for Kansas and to offer the man in practice the best postgraduate effort in the United States.

The citizens of our State have, of course, been the final judges of the success of this joint medical adventure and I leave with a deep conviction that in no other state is there a better demonstration of the combined potential of the people, their tax money, their State Medical School, and their private practitioners.

I am leaving Kansas because my own professional interests have steadily developed into the training of specialists in cardiovascular disease and in research in this field. The administrative responsibilities of an area as large as the Department of Medicine are considerable and for these next several years I believe it will be wiser for me to limit my administrative duties and to concentrate on certain areas of cardiovascular teaching and research.

A decade is a large part of a man's life. I leave here with a deep affection for Kansas and a sincere respect for the quality of its physicians. I hope through the years to return often.

Dr. Wrightman, my warmest personal regards to you and to the physicians of Kansas

Cordially yours,

Edmunds Grey Dimond, M.D.

Director, Cardiovascular Laboratory
Professor and Chairman
Department of Medicine

Blue Shield

Emphasize Economy Objectives During 1960

More members, higher reserves, and lower operating costs are the three major objectives of Kansas Blue Cross-Blue Shield this year. An outline of work activities planned by the staff in order to achieve these three objectives has been presented at all District Blue Shield Relations meetings held during the past month.

A membership growth of 25,000, which is a 25 per cent increase over the year 1959, is the enrollment goal for the year, and at the same time the organization will be striving to upgrade coverage so that on the average, members can expect at least 70 per cent coverage on physicians' charges.

At present, about 37 per cent of Kansas Blue Shield members have benefits which allow them this 70 per cent coverage, and in order to increase this for the remaining 63 per cent, enrollment emphasis will be placed on Blue Shield Plan B (or Schedule 2, as it is referred to on the member's Identification Card). Plan B has a higher fee schedule for all Blue Shield procedures.

Major Medical

Enrollment people will also introduce *Major Medical* into as many Employee Groups as possible in order to upgrade coverage still further. Many of Kansas Blue Cross-Blue Shield's Employee Groups today have already installed the new Major Medical Program. Available to Groups of ten or more, it provides thorough coverage for the catastrophic and long-term illness or accident, but at the same time includes the equally thorough basic protection they now have.

Economy Measures

Further economy measures will be taken this year in an effort to hold any necessary rate increase for Blue Cross to not more than five per cent, and to eliminate entirely any rate increase in Blue Shield. This will mean that a savings of $800,000 must be made over last year's expenses in Blue Cross, with a savings of at least $200,000 in Blue Shield.

How It Will Be Done

To accomplish these major savings, the following economy measures will be taken:

1. Case and administration expense will be reduced.
2. An extensive study of utilization will be made by physicians.
3. More economical use of hospital facilities is anticipated.
4. The possibilities of area rating will be studied further.
5. Membership education programs will be undertaken.

More than 44,700,000 persons were enrolled in the various Blue Shield Plans located in North America as of December 31, 1959, the National Association of Blue Shield Plans reported. Total membership in the Plans reached 44,792,923 at the end of the past year, which represents an enrollment of 24 per cent of the total United States population and nearly 15 per cent of the total Canadian population.

"The net gain in membership for 1959 amounted to 2,217,667, which is significant improvement over the 1,096,203 gain for the year 1958," the national association also indicated in its year-end report.

"The acceptance of Blue Shield as a means of helping to pay medical-surgical bills is reflected in the growth of these Plans in the past decade. Blue Shield has grown from a membership of more than 16,500,000 in 1950 to its present figure only through the offering of a program that has continued to meet the demands and needs of the American public," the report concluded.

The Business Side of Medicine

Let a Corporate Trustee Manage Your Estate

FLOYD F. WEHRENBERG, ***Kansas***

During his productive years the average Doctor hopes to accumulate adequate capital for retirement and a sufficient estate to provide for his family in case of his death. You are well aware of the difficulties involved in making these accumulations. Taxes, bad investments and poor judgment increase these difficulties. You are also well aware of the decisions, planning, and worries involved. Will your wife be able to assume these burdens? Is it fair to expect her to do so even if she is able? Many widows today would answer this question very decisively for you. This is the reason more and more people are turning their estates over to corporate trust departments to manage.

What Do They Offer

What do corporate trust departments have to offer, how do they operate and what will it cost?

1. They will manage all or any part of your estate turned over to them by will or trust agreement.

2. They will act as executor or trustee of your estate, assuring prompt action and proper know-how for best results.

3. Available funds will be fully invested at all times to produce maximum yield and safety.

4. Changes in investments will be made without worry or responsibility to your beneficiaries.

5. Your estate will be in one place for management purposes. This will eliminate the need to deal with a number of different people and will provide proper co-ordination at all times.

6. Your estate can be flexible enough to meet all contingencies but will be kept within the goals set forth by you regarding investment policy and disbursement of funds.

7. Funds placed with a trust department are completely set apart from other bank funds. National bank trust departments are subject to audit by federal bank examiners; adequate bonding is required; comprehensive records are mandatory and all investments must be approved by the trust investment committee composed of senior bank officers.

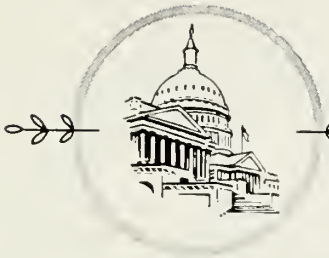
8. The corporate trust department guarantees continuity of supervision. This overcomes the principal disadvantage of the individual trustee. An individual named may be fully competent but death or disability may necessitate a replacement who may be less capable. With the corporate trust department, the same expert management is not in any way dependent upon the ability or survival of any one individual.

9. Costs for executors are set by law. Fees for trust management average ½ of one per cent of the annual value of trust assets. If your trust were $100,000 it would cost about $500 per year to manage. This fee is generally repaid many times over through prudence in managing your assets.

10. With taxes and inflation, the burden of conserving an estate is an enormous one. The size of

(Continued on page 312)

Mr. Wehrenberg is Missouri-Kansas manager, Professional Management Midwest, 4010 Washington Street, Kansas City, Missouri.



Washington HIGHLIGHTS

This summary of Washington news is prepared by the A.M.A. Washington Office for distribution to state medical journals.

Defeat of the Forand bill in the House Ways and Means Committee highlighted developments on the issue of legislation to provide more Federal health care for the aged.

The Committee voted 17 to eight on March 31 to shelve the Forand bill which would increase Social Security taxes to provide surgical benefits and limited hospitalization and nursing home care for Social Security beneficiaries, except the disabled.

However, the issue remained very much alive.

Issue Still Hot

The Eisenhower Administration and Congressmen were separately considering various alternative proposals to provide additional health care for the aged, but outside the Social Security system. And the action of the House Committee did not rule out the possibility of Forand-type legislation being brought up in the Senate later this session.

The House Committee vote against the Forand bill came during the drafting of an omnibus measure of revisions in the Social Security program. The Committee voted tentatively to bring physicians under Social Security.

The Committee also favored elimination of the requirement that a disabled person must be 50 years or older to be eligible for Social Security payments.

Arthur S. Flemming, Secretary of Health, Education and Welfare, said the Administration was considering a plan for Federal payments to the states to help needy old persons buy private health insurance on a voluntary basis. He said he hoped the plan would be ready for submission to Congress by late April.

Help From Government

Sen. Jacob K. Javits (R., N. Y.) and seven other Republican Senators introduced similar legislation in the Senate. The bill called for the Federal government and states jointly putting up about $1 billion a year to help persons 65 years and older, and their spouses, to buy private health insurance. The coverage would include physicians' care in home and office, diagnostic services, hospitalization, and nursing home care.

Another plan being considered by some other members of Congress would broaden the Federal-State public assistance program to provide more health care for needy older persons.

Both President Eisenhower and Vice President Nixon reiterated their opposition to any compulsory health plan such as the Forand bill. The President told a news conference that such plans would be a definite step toward socialized medicine. He proposed that medical care for the aged be improved through further development of voluntary health insurance programs.

Nixon's Letter to Doctors

Vice President Nixon gave his position in a letter to physicians who had communicated with him about the matter.

"The Vice President, throughout his career as a public official, has consistently opposed and will continue to oppose any compulsory health insurance program," the letter said. "Thus, of course, includes the Forand bill. . . ."

"He believes that the best way to handle the problem of people over 65 who do not have and cannot afford health insurance is through a program which will enable those who desire to do so to purchase health insurance on a voluntary basis."

On the other side, three candidates for the Democratic nomination for President—Sens. John F. Kennedy (Mass.), Hubert H. Humphrey (Minn.), and Stuart Symington (Mo.)—said they would push for passage of Forand-type legislation.

Labor Attacks A.M.A.

The AFL-CIO continued its all-out campaign in support of the Forand bill. Leaders of the labor union repeatedly attacked the American Medical Association for opposing the bill.

One of the attacks prompted Dr. Louis M. Orr, Fla., to protest in a letter to AFL-CIO President George Meany against the union's "deliberate dis-

tortions of the truth, perversions of the truth, and outright untruths."

Dr. Orr charged that allegations in a political memorandum of the AFL-CIO's Committee on Political Education (COPE) "not only . . . attempt to impugn the motives and competence of the nation's physicians, but they seek to mislead labor's rank and file, the members of Congress, and the American people as a whole."

"When the A.M.A. opposes any legislative health measure, it does so because its members believe that it would lead to poorer—not better—health care for the people of this country," Dr. Orr said.

Senate Republican Leader Everett M. Dirksen (Ill.) also defended the A.M.A. as well as the Eisenhower Administration, against the attacks when AFL-CIO leaders repeated them in testimony before the Senate Subcommittee on Problems of the Aged and Aging.

Sen. Dirksen denounced them as "gratuitous slurs," "stinking statements," "invidious . . . insane charges" which constituted "an absolute disservice to the country."

Appel's Testimony

Dr. James A. Appel, Lancaster, Pa., a member of the A.M.A. Board of Trustees, testified before the Senate Subcommittee that the greatest health problem faced by older people is "their isolation from the rest of society." He said:

"The health problems of the aged can only be solved within the context of total health. They involve far more than hospitals or a doctors' care. They involve the older person's other requirements in life, whether these be housing, recreation, community understanding and acceptance, the right to be useful, the courtesy of being treated as individuals, or the opportunity of living as self-reliant, respected members of society."

As for an aged person being denied medical care because of a lack of money, Dr. Appel said emphatically:

"Medical care is available to every man, woman, and child in the United States regardless of his or her ability to pay for it.

"That care is not now denied, nor will it be denied."

Better Public Schools

Commenting favorably upon recent progress in improving the nation's public schools, the Research and Policy Committee of the Committee for Economic Development (CED) advanced four recommendations for achieving further needed improvement.

"Nobody can give the American people better schools," they stated. "But we can afford better education and will get it if we recognize the need."

The four recommendations were:

- Mandatory action by the state governments is needed in most states, including almost all of the most populous states, to bring about "immediate reorganization of small school districts into effective units of local government."
- The state governments should assume a larger share of the financial burden of schools now borne by the local districts, and state funds should be distributed through foundation programs.
- Financial grants of about $600 million annually should be made by the Federal government "to support public schools in those states where income per public school child is substantially below the national average."
- Better local, state and Federal organization of citizens who appreciate the need for improved education is necessary for improvement of the schools in order to "generate the energy necessary for results." Participation by businessmen, the report says, often can be especially helpful.

They stressed that the CED Research and Policy Committee, after two years' study, does not believe that the present system of school finance in the several states "has broken down or is about to do so."

"Therefore, we do not believe that a wholly new or radically different method of financing schools is needed. What is needed, in our opinion, is modification of the existing system . . . and more vigorous exploitation of its potentialities."

CED is a research organization of 200 business executives and scholars who work together studying national and international economic problems in an effort to increase employment and to promote stable economic growth.

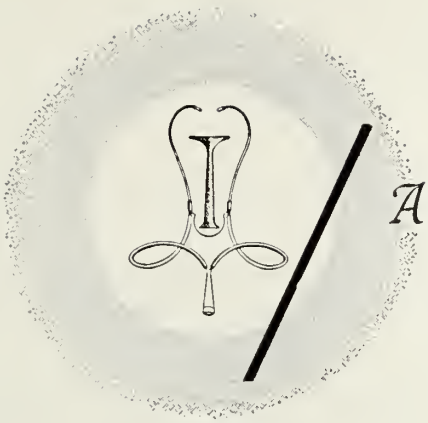
The Business Side of Medicine

(Continued from page 310)

your estate is not important; in fact, the smaller estate has a bigger job to do and the responsibility of supervision is doubly important.

Consider Estate Management Too

If you have reached the enviable position of having accumulated an estate sufficient to fulfill your goals and you have it systematically planned for minimum taxation, take another look from the standpoint of management. Have you provided for the most capable, continuous management available which will demand the least worry and responsibility to your loved ones?



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. *Notice of the session is posted in advance to allow the physician time to make preparations.*

Applications for certification in the American Board of Obstetrics and Gynecology, new and reopened, Part I, and requests for re-examination in Part II are now being accepted. All candidates are urged to make such application at the earliest possible date. Deadline for receipt of applications is August 1, 1960. No applications can be accepted after that date.

Candidates are requested to write to the office of the Secretary for a current Bulletin if they have not done so in order that they might be well informed as to the present requirements. Application fee ($35.00), photographs, and lists of hospital admissions must accompany all applications.

As announced in the current Bulletin, "after July 1, 1962, this Board will require a minimum of three (3) years of approved progressive Residency Training to fulfill the requirements for admission to examination. After the above date, training by Preceptorship will no longer be acceptable. Therefore the initiation of Preceptorships will not be approved after July 1, 1960."

Contact Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

The University of Illinois College of Medicine Department of Otolarynology will offer an intensive postgraduate basic and clinical program for practicing otolaryngologists. The Assembly offers a compact program of one week of daytime and evening sessions. It is designed to bring to specialists a wide variety of current advances in management, therapy and philosophies. Review of basic morphologic features is also included by means of laboratory demonstrations, dissection and prosection, all augmented by visual aids. It will be held September 24 through 30, 1960.

Panel programs have been designed to bring out special features of otologic and reconstructive surgery and tumors of the head and neck. Luncheon chats are an important part of the daily program.

Interested physicians should write direct to the Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12, Illinois.

A Clinical Conference on Cancer of the Female Genital System will be held at The University of Texas M. D. Anderson Hospital and Tumor Institute, Houston, Texas, October 21 and 22, 1960.

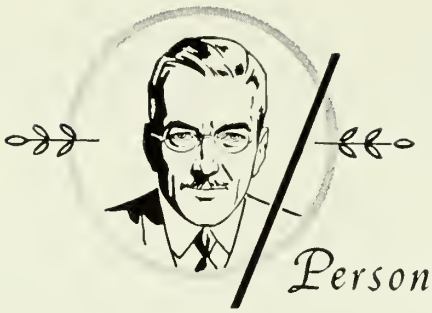
Treatment procedures for patients with carcinoma of the cervix, endometrium, and ovary will be discussed in lectures and panel discussions. The experience and policies of treatment at The University of Texas M. D. Anderson Hospital will be reviewed.

Dr. Hans Kottmeier, of the Radiumhemmet in Stockholm, Sweden, will be the guest speaker at the Conference. The program is under the direction of Felix N. Rutledge, Section of Gynecology, Department of Surgery, M. D. Anderson Hospital and Tumor Institute.

The 67th Annual Convention of the Association of Military Surgeons of the U. S. will be held October 31, November 1 and 2, 1960, at the Mayflower Hotel in Washington, D. C.

Its theme will be "The Military Role in Medical Progress."

President of the Association is Rear Adm. Richard A. Kern, MC, U.S.N.R., Ret. The General Chairman of the meeting is Rear Adm. Curtiss W. Schantz, DC, U. S. Navy Asst. Chief of Bureau of Medicine & Surgery for Dentistry, Navy Department, Washington 25, D. C.



Personalities—IN KANSAS MEDICINE

Dr. William J. Reals, Wichita, Director of Pathologic and Clinical Laboratories at St. Joseph Hospital, was one of 21 physicians named to assist the Federal Aviation Agency in determining the relation of human factors to aircraft accidents.

Described by FAA as one of "the nation's 21 leading forensic pathologists," Dr. Reals will join a nationwide program of aero-medical investigations of fatal accidents. Under the program, the pathologist nearest an accident will visit the scene as soon after an accident as possible.

Dr. Everet Beaty, Parsons, County Health Doctor, was a guest speaker at a recent Parent-Teachers Association meeting held in Chetopa.

Dr. Jack D. Walker has opened an office for medical practice in Pittsburg. Dr. Walker, who formerly practiced for four years in Girard and then spent 18 months as assistant to Dr. W. Clarke Wescoe at the University of Kansas Medical Center, began his practice last month.

Dr. Clarence W. Erickson recently returned from San Francisco, California, where he attended a meeting of the American College of Physicians.

A group of young students recently met in Augusta for a science seminar and listened to **Dr. James L. Barber** give a presentation on the miracles of the structure and functioning of the heart.

For the purpose of demonstration, Dr. Barber used drawings, slides and a human heart that he obtained from the University of Kansas School of Medicine.

Dr. J. W. Jacks, Secretary of the Pratt County Medical Society, writes of the success of their recent Pratt Regional Science Fair. Some 60 students from all over southwestern Kansas displayed scientific exhibits. This was the first year for their fair in Pratt and they were very pleased with its outcoming. The Fair was divided in Junior High and Senior High School divisions and the winner of the Senior High School division received an all expense paid trip to the National Science Fair in Indianapolis, Indiana.

Dr. C. C. Fuller of Columbus attended the 28th annual assembly of the Southeast Surgical Congress held in New Orleans.

A series of clinical presentations, with former patients present, to demonstrate the effectiveness of treatment of bone injuries was witnessed recently at the annual meeting of the Mid-Central States Orthopedic Society.

The conference scheduled talks by **Dr. Leonard F. Peltier,** professor of orthopedic surgery at Kansas University School of Medicine; and **Drs. Charles K. Wier, Charles Rombold, John K. Lance** and **H. O. Anderson,** all of Wichita.

Dr. H. J. Wisner, Wichita physician, was elected president of the recently organized Kansas chapter of National Arthritis and Rheumatism Foundation.

Dr. A. E. O'Donnell, Junction City, recently completed 60 years as a physician and surgeon. Forty-seven of these years were spent in Junction City. He is still in active practice there.

Dr. Prescott Thompson, Topeka, spoke at the University of Wichita Conference on Aging. His topic was "Current Issues in Aging."

Several Kansas physicians did participate in the Kansas Society of X-Ray Technicians meeting held in Dodge City, April 29 and 30. Among the guest speakers were **Drs. C. K. Zacharias,** Dodge City, **R. E. Speirs,** Dodge City, **Ivan A. Rhodes,** Wichita, **Emmett McCusker,** Halstead, and **M. J. Cox,** Dodge City.

"Cancer Can Be Cured" was selected as the theme for the 12th Annual Midwest Cancer Conference held in Wichita.

The meeting was sponsored by the Kansas Division of the American Cancer Society, Inc., and was for all physicians and allied professional persons in the midwest area. **Dr. Larry Vin Zant,** Wichita, is president of the Kansas Division.

A meeting of the Golden Belt Medical Society was recently conducted and hosted by the Geary County Medical Society. It was held at the Country Club in Junction City and the program for the meeting was a panel discussion on Workmen's Compensation problems by a local attorney with **Drs. H. Richard Draemel,** Salina; **C. L. Lessenden,** Topeka; **L. C. Owensby,** Concordia; and **M. L. Pusitz,** Topeka, as panelists.

Dr. M. D. McComas, Jr., is president of the Golden Belt Society; **Dr. Alex Scott** is secretary; and **Dr. Charles Svodoba,** is vice president.

NEW MEMBERS

The JOURNAL *takes this opportunity to welcome these new members into the Kansas Medical Society.*

John T. Brauchi, M.D.
Dept. of Psychiatry
K. U. Medical Center
39th & Rainbow Blvd.
Kansas City 12, Kansas

Robert A. Eastwood, M.D.
425 E. Murdock
Wichita 14, Kansas

Glen E. Eaton, M.D.
201 W. Wilson
Salina, Kansas

John R. Erwin, M.D.
V. A. Hospital
Topeka, Kansas

Evan L. Frederickson, M.D.
K. U. Medical Center
39th & Rainbow Blvd.
Kansas City 12, Kansas

Raymond S. Freeman, M.D.
Mowery Clinic
Salina, Kansas

M. Don George, M.D.
135 E. Claflin
Salina, Kansas

Emil L. Goering, M.D.
Pretty Prairie Clinic
Pretty Prairie, Kansas

L. E. Harrington, M.D.
1412 N. Second
Atchison, Kansas

Marilyn K. Hutchison, M.D.
K. U. Medical Center
39th & Rainbow Blvd.
Kansas City 12, Kansas

Jess W. Koons, M.D.
15 East 11th
Liberal, Kansas

Chien Liu, M.D.
K. U. Medical Center
39th & Rainbow Blvd.
Kansas City 12, Kansas

Robert T. Manning, M.D.
K. U. Medical Center
39th & Rainbow Blvd.
Kansas City 12, Kansas

Norman G. Marvin, M.D.
Kiowa Dist. Hosp. Clinic
802 Drum
Kiowa, Kansas

Jack D. Reese, M.D.
15 East 11th
Liberal, Kansas

Hugh D. Riordan, M.D.
3101 East 9th
Wichita 14, Kansas

Marion F. Russell, Jr., M.D.
Russell Clinic
Great Bend, Kansas

Richard L. Sifford, M.D.
3244 E. Douglas
Wichita 8, Kansas

Carol A. Sleeper, M.D.
Elkhart, Kansas

Donald C. Sleeper, M.D.
Elkhart, Kansas

Robert J. Unrein, M.D.
351 West 10th
Hoisington, Kansas

Nursing Home Program

A strong program of nursing home construction was recommended by the president of the American Hospital Association as one of the best methods for meeting the health care needs of the aged population.

Writing in *Hospitals,* Journal of the A.H.A., Russell A. Nelson, M.D., director of the Johns Hopkins Hospital, Baltimore, said, "Nursing home care is central in the problem of care of the aged."

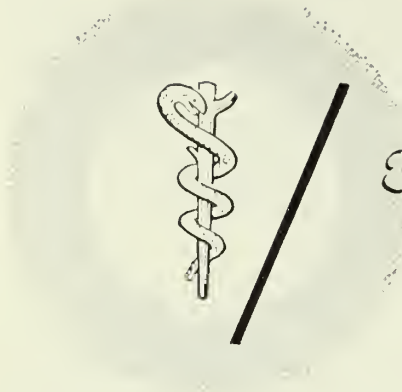
Much of the illness of old age is of a long-term type and new methods of caring for such illness are needed, he said. The general hospital, and its medical staff, is increasingly taking more responsibility for chronic illness, with research in degenerative diseases—so much a part of aging—increasing. However, the general hospital cannot handle the aged's health care alone.

The present system of nursing homes is inadequate, according to the A.H.A. president. "Family after family," he said, "find it almost impossible to accept the lack of facilities, the low standard of care, and the high cost which all too often cannot be prepaid."

"It may be," Dr. Nelson continued, "that there is need for a strong program of federal financial assistance in the building of superior non-profit nursing home facilities, with special emphasis on non-profit nursing homes incorporated into or affiliated with general hospitals."

He noted that the American Hospital Association and the physicians of the country "could greatly improve the health care of our older people if they would unite in the intelligent development and promotion" of a program of nursing home construction.

Dr. Nelson also called for the development of programs to aid the medically indigent at the local level. The AHA and the American Medical Association have already jointly recommended such local action, while opposing the Forand Bill, now before Congress. This calls for financing the health care of the retired aged under the social security mechanism.



The Kansas Press Looks at Medicine

Editor's Note. In this section the JOURNAL *reproduces editorials relating to medicine which have appeared in the lay press. An effort is made to include both favorable and unfavorable comments, and the Editorial Board in no instance assumes responsibility for the opinions expressed.*

SHALL WE DRIFT—OR ROAR MIGHTILY?

It is likely some bill to provide medical aid to the aged through taxes will be passed by Congress, Elderly citizens, caught in a cost squeeze, have a lot of sympathy that is deserved. But is putting one foot into the door of socialized medicine the answer? Is is necessary for the United States to take another stride in socialism to solve this problem?

* * *

Medical aid to the aged sounds wonderful. So do most of the other socialistic practices when segregated and viewed as a single item designated to benefit one minority group. But when you add them up there comes the alarming conclusion that the free enterprise system is being pushed aside by a series of laws, rules, directives and regulations that are placing the federal government in absolute control of our economy. We are swirling into a system that takes most of the income from business and wage-earners, sends it to Washington, and sees it return in the form of grants, pensions, benefits, subsidies and "gifts." The sad part is along with our money we send the power to control and supervise. And considerably less money returns than is sent.

* * *

Federal aid to education is looming on the horizon. That means sending our school money to Washington and getting it back plus a lot of rules, regulations and directives to govern the operation of local schools. As mentioned previously in this column, there is strong sentiment to pass an appropriation bill to "combat juvenile delinquency." Stripped of its lofty title, it means sending more tax money to Washington so bureaucrats can guide American children down the road to right living, thus relieving parents of that God-given responsibility.

* * *

Social welfare, social security, workmen's unemployment compensation, grants to hospitals, subsidies to business and agriculture, the printing of envelops by the government for business firms, school lunch programs, defense contracts to industry—you can cite them individually and make them alluring to segments of our population. Also, you can add them up and come to the unmistakable conclusion that we are halfway to our necks in socialism and wading constantly into deeper water.

* * *

Most citizens abhor the thought of state socialism. But individual citizens and communities face a situation that forces them to go along if they want to get a fair share of their federal tax money returned. "If we don't build a town hall, Sedan or Coffeyville will, and our federal grant will go there," is typical reasoning.

* * *

We hope some presidential candidate will make it clear to Americans just how far down the road to socialism we have traveled since the 1930's. We hope every voter will learn the attitude of congressional candidates on this matter before they cast ballots. It is time to decide whether to continue our silent drift into socialism or to let out with a mighty American roar for a return forthwith to the free enterprise system that made the United States the most wonderful nation on earth.—*Caney Chronicle*, April 10, 1960.

KMS Obituaries

V. J. ELSON, M.D.

Dr. V. J. Elson, 53, a well-known Paola physician, died April 5, 1960 at his home. Death was reported to have resulted from a heart attack he suffered after returning from the Miami County hospital where he had been on an obstetrical case.

He was born on October 6, 1906 in Norton County, Kansas. He attended school at Almena and the University of Kansas where he received his M.D degree from the School of Medicine in 1935. After serving his interneship at St. Mary's hospital, East St. Louis, Illinois, Dr. Elson started his medical practice in Ottumwa, Iowa.

He had served 12 years as member of the Board of Education, being president several terms. He was a member of the Presbyterian church and had served on the board of trustees and as an elder. In January he was appointed a director of Kansas Children's Service League and he was a member of the advisory board of the Miami County Association for Retarded Children.

Among his survivors are his wife, a daughter, and his mother.

RALPH L. FUNK, M.D.

Dr. Ralph L. Funk, 82, veteran physician and former Brown County resident, died April 5 in his home in Topeka.

Despite his advanced age, he still maintained an office in the National Reserve Building at the time of his death, although he limited his practice in 1958. Dr. Funk was born February 22, 1878, at Oneida, and graduated in 1900 from the College of Physicians and Surgeons in Kansas City. He was the youngest graduate from that school which later became the University of Kansas Medical School.

After practicing for about a year in Kowa County, Oklahoma, he enrolled in the medical school of the City College in New York where he completed a postgraduate course in 1904.

In 1905, he established an office at Powhattan and built up an extensive practice throughout that part of Kansas. Dr. Funk moved to Topeka in 1930 and began his practice there.

Among his survivors are his wife, a daughter, two sons, several grandchildren, a sister, and a brother.

D. G. BULEY, M.D.

Dr. D. G. Buley, 82, of Wichita, a physician in Sedgwick County for over 50 years, passed away March 18. The Sheriff's Patrol reported that Dr. Buley apparently suffered a heart attack and died while driving his automobile. The doctor's automobile veered off and struck a parked telephone truck.

Dr. Buley was born May 23, 1878 and received his medical degree from the University of Louisville, Louisville, Kentucky. He began his practice in Valley Center, Kansas, and moved to Sedgwick shortly thereafter. The doctor, a bachelor, served as captain in the Army Medical Corps during World War I. Among his survivors include a brother and nephew of Indianapolis.

He was one of the last of Sedgwick County's old-time country doctors.

LEO V. TURGEON, M.D.

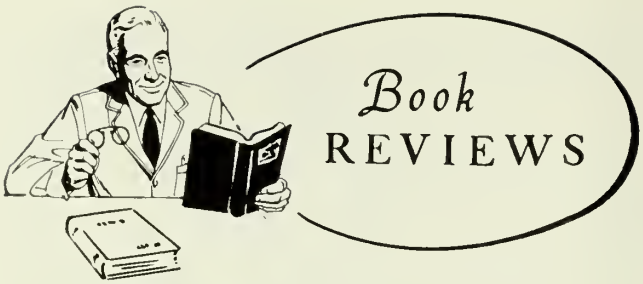
Dr. Leo V. Turgeon, 69, a Topeka physician, and former member of the State Board of Administration, passed away in a Topeka hospital March 5.

He was born February 27, 1891, in Kansas City, Missouri and received his M.D. degree in 1913 at the University Medical College of Kansas City, Missouri. He began the practice of medicine in Dorrance in Russell County, Kansas. For several years he operated a hospital in Wilson in Ellsworth County and was district surgeon for the Union Pacific Railroad in Wilson district.

He was secretary of the Central Kansas Medical Society for eight years and was president for two. He was chairman of the Ellsworth County Democrat Central Committee for six years and attended the Democrat national convention in Chicago in 1932 as an alternate delegate.

He has practiced medicine in Topeka since 1939. He had an office in the Mills Building with his nephew, Dr. Darrell Weber.

Among his survivors include his wife, three sons, two daughters, several grandchildren, a brother, and a sister.



THE KANSAS DOCTOR: A CENTURY OF PIONEERING. By Thomas N. Bonner, 8° cloth, pp. 334 with 36 Illustrations. Lawrence, Kansas: The University of Kansas Press, 1959. Price $5.00.

Professor Bonner, an able medical historian, has presented what appears at first sight to be an account of the local Kansas scene in medicine, but as the story unfolds a comprehensive picture of the midwest's medical accomplishments emerges with Kansas as a focal point of action. The first generation of medical pioneers shared in the settlement of first, the territory and then the state. Then entered politics, farmed, kept store, taught school and practiced medicine. The second generation of Kansas doctors saw the dawn of the modern era of scientific medicine. This generation contended with findings of Koch, Lister, Pasteur. Printed scientific discussions about these new ideas were no different in Kansas than in other parts of America, but they form a well documented and orderly account in this local history. The rough and tumble activities of early days in the West became more orderly and along with this the physicians, of all shades of training, forged ahead in establishing local and state societies. More recent activities of the Kansas doctors indicate that Kansas has taken the leadership in public health, rural medicine and the care of the mentally ill. Such names as Samuel Crumbine, Logan Glendenning, Arthur Hertzler, Franklin Murphy, and the Menningers are familiar to many laymen. Arthur Hertzler's, "Horse and Buggy Doctor" was once on the best seller list. Dr. Bonner's book is entertaining enough, but it is enlivened even more so by the account of one character whose role was less creditable, namely, Dr. John R. Brinkley. The illustrations are well chosen and emphasize points that could not be done otherwise. The author was commissioned to write this book under the joint committee from the Kansas Medical Society and the University of Kansas. He has done exceedingly well in presenting the larger movements and meanings in Kansas medical history. Except for a few minor points, the author, to my mind, has examined the Kansas Doctor's testimony critically. It it fitting that this should be an evaluation of the Kansas Medical Society's first 100 years.—*P.G.R.*

FIRST AID: DIAGNOSIS AND MANAGEMENT. By Warren H. Cole, M.D. and Charles B. Puestow, M.D. and 16 Collaborating Authors. The Appleton-Century-Crofts, Inc., New York, 1960, 432 pages, 217 Illustrations, Price $6.25.

This is not just another first aid handbook that should be stored away in some medicine chest in the bathroom. It is a well written text discussing first aid from a physician's standpoint. It is complete and up-to-date including such topics as emergency care of all types of injuries, shock or medical emergencies resulting from accidents, industrial hazards, civilian or military casualties including atomic blast, burn, and radiation types. The carefully worded instructions are accurate and display over 200 illustrations to supplement the descriptions.

This book covers all types of emergencies and stresses what to do and what *not* to do when accidents occur. It is written especially for a professionally trained person, but it will be most valuable in training lay persons who should know how to cope with all kinds of disasters. The publishers state that the book will be in use by students of the biological sciences, particularly those in the MEND program.

I would recommend this book for your office and for the physician involved in community civil defense projects I would recommend that he use it as part of the first aid instruction program for training rescue squad personnel.—*D.A.L.*

THE STORY OF DISSECTION by Jack Kervorkian, M.D. 80 pp. Illus. Price $3.75. Philosophical Library, New York, 1959.

Dr. Kervorkian has traced the history of human dissection through the fabric of history in a most pleasing manner. We, of the 20th century are now reaping the fruits of those men of genius who saw

in anatomy and the necropsy the basic groundwork for a well trained physician. We, now, in our modern era, due to the complexity and volume of information to be taught, have taken a course which may prove fatal, namely the lack of time devoted to basic information of the structural and functional aspects of man. For Alexandrians, for Aristotle, for Fernel, for Bichat, for Rokitansky, and for Virchow, structure and function were all important. . . . "Physiopathology was the embodiment of that for which they strove."

Virchow saw the organism as a whole and not as an assemblage of parts, but as unity of structure and function. As Dr. Kervorkian points out, as long as we maintain this unitarian outlook there will always be that promise of eventually understanding more of the nature of man. From Menes of Egypt over 4,500 years ago to modern times, THE STORY OF DISSECTION is presented with two aspects: The attitude of society toward such matters, and the actual performances of dissections. The reader will be fascinated by this story. It is exceedingly well done for such a small book. It is well illustrated by portraits of the great physicians of the past who have made this scientific era of medicine possible. References are presented but an index is lacking.—*P.G.R.*

TEXTBOOK OF MEDICINE. Russell L. Cecil, M.D., and Robert F. Lobe, M.D., W. B. Saunders Co., Philadelphia, 1959, 1,665 pages, 1 or 2 volumes, $16.50 for one volume, $20.50 for two volumes. Illustrated.

Among the medical tomes, few merit the respect and reverence that traditionally is rendered to Cecil's *Textbook of Medicine*. This 10th edition suffers not at all by comparison to its prior editions since 1927. The roster of authors merits similar renown to their predecessors. Perhaps no physician can thoroughly digest all the information available in more than 1,600 pages but there is, at the same time, perhaps no better reference to current information available in the English language. Not the least in stature of excellence of the many chapters present is the outstanding foreword written by Dana Atchley on Patient-Physician Communication.—*J. A. S.*

BOOKS RECEIVED

Books received by the JOURNAL OF THE KANSAS MEDICAL SOCIETY *are acknowledged in this column. Selections will be made for more extensive review in the interests of readers as space permits. Members of the Society, from time to time, review these books and their critique is presented in this section. The reviewers receive the complimentary book from the publisher for their efforts.*

COMMUNICABLE AND INFECTIOUS DISEASES. Franklin H. Top, M.D., C. V. Mosby Co., St. Louis, 1960, 812 pages, 122 Illustrations, Price $20.00.

MEDICAL CARE OF THE ADOLESCENT. J. Roswell Gallagher, M.D., Appleton-Century-Crofts, Inc., New York, 1960, 369 pages, Illustrated.

Highlights of Hutchinson

(Continued from page 305)

year celebration. Following the singing the Norman Lee orchestra played for the enjoyment of the dancers.

Third General Session

The final Scientific Session of this year's meeting was called to order by Dr. J. L. Perkins. He introduced Dr. Julius R. Krevans, Baltimore, who spoke on "Use and Abuse of Hematinics." He was followed by a talk given by Dr. William Sauer from Mayo's on "Clinical Observations on Withdrawal of ACTH." Dr. Krevans returned to the speakers stand and spoke on "Blood Types and Groupings." His speech closed the Scientific Sessions for 1960.

Second House of Delegates

Dr. Peters called the 65 delegates, 12 councilors, eight officers, and seven past-presidents of the second House of Delegates to order Wednesday afternoon. This session was charged with voting on the resolutions presented at the first House plus any new business. Sixty resolutions had been placed before the reference committee and they spent most of Tuesday discussing them and hearing testimony. Several resolutions were combined by this committee and the final count to be brought before the second session was 56. The committee's recommendations concerning these resolutions were presented to the body by Dr. J. W. Manley, chairman.

It would be impossible to list all of the resolutions or their discussion in this short summary. However, a few of them have been given in a brief form.

The House of Delegates voted to:

1. Require that all members of the Kansas Medical Society shall belong to the American Medical Association.
2. Cooperate with the Kansas Blue Shield to set up some means to provide medical insurance coverage to Kansans regardless of age.
3. Give the Council power to revoke the charters of the small component societies when their membership falls below the required minimum number of three.
4. Extend the work of the Fee Schedule committee in that the results of the surveys on fees conducted in the Society were most gratifying. Some 850 of them were returned to be tabulated through IBM equipment. The analyzing of this material will mean the consideration of every individual fee and will take a long time. The committee was authorized by the House to continue the work and report its results to the next meeting at which time the Relative Value Scale will be revised.

Election results:

President-Elect.....Harold M. Glover, *Newton*
First Vice-President.....Norton L. Francis, *Wichita*
Second Vice-President....H. St. Clair O'Donnel, *Ellsworth*
Constitutional Secretary....George E. Burket, Jr., *Kingman*
Treasurer.....John L. Lattimore, *Topeka*
A.M.A. Delegate 1961-63.....Lucien R. Pyle, *Topeka*
A.M.A. Alternate 1961-63....Glenn R. Peters, *Kansas City*
JOURNAL Editor.....Orville R. Clark, *Topeka*

A more complete report of the activities will be presented in the *June* issue of the JOURNAL OF THE KANSAS MEDICAL SOCIETY.

The Kansas Medical Society—1959-1960

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Chase		Jacob Hinden, Strong City
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Cloud	M. C. Pearson, Concordia	F. P. Thornton, Jr., Concordia
Coffey	A. B. McConnell, Burlington	Henry J. Dick, Jr., Burlington
Cowley	G. L. Norris, Winfield	Edgar D. Hinshaw, Arkansas City
Crawford	R. W. Friggeri, Girard	Howard R. Elliott, Pittsburg
Dickinson	Fred Dozier, Herington	Roger D. Warren, Enterprise
Doniphan	Emerson D. Yoder, Denton	Robert L. Corder, Highland
Douglas	Howard L. Wilcox, Lawrence	James S. Reed, Lawrence
Edwards	M. Dale Atwood, Kinsley	F. G. Meckfessel, Lewis
Finney		Robert M. Fenton, Garden City
Ford	E. W. Schwartz, Dodge City	R. E. Speirs, Dodge City
Franklin	J. F. Barr, Ottawa	David G. Laury, Ottawa
Geary	C. V. Minnick, Junction City	H. L. Bunker, Jr., Junction City
Greenwood	John H. Basham, Eureka	Robert L. Obourn, Eureka
Harvey	Frances A. Allen, Newton	Lee S. Fent, Newton
Iroquois	Ronald McCoy, Coldwater	
Jackson		Roy H. Moser, Holton
Jefferson	R. R. Snook, McLouth	
Jewell	C. S. Hershner, Esbon	R. M. Owensby, Mankato
Johnson	A. S. Reece, Gardner	R. E. Delphia, Olathe
Labette	Guy W. Cramer, Marion	J. D. Pace, Parsons
Leavenworth	Kenneth Powell, Leavenworth	J. M. Graham, Leavenworth
Lyon	K. L. Lohmeyer, Emporia	C. H. Munger, Emporia
McPherson	Weir Pierson, McPherson	W. J. Collier, McPherson
Marion	R. D. Wood, Peabody	R. L. Krause, Goessel
Marshall	J. W. Randell, Marysville	D. M. Diefendorf, Waterville
Miami	Rex Stanley, Paola	James Fowler, Osawatomie
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Montgomery	Albert E. Bair, Independence	P. E. Barbera, Independence
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Nemaha	V. E. Brown, Sabetha	Cecil C. Hunnicutt, Sabetha
Neosho		Albert A. Kihm, Chanute
Northwest Kansas	Floyd L. Smith, Colby	Wayne G. Parker, Hoxie
Osage		J. L. Ruble, Jr., Overbrook
Osborne	W. W. Miller, Osborne	J. E. Henshall, Osborne
Pawnee	O. R. Cram, Larned	H. L. Patterson, Larned
Pottawatomie		Fred E. Brown, St. Marys
Pratt-Kingman	F. G. Freeman, Pratt	J. W. Jacks, Pratt
Reno	V. R. Moorman, Hutchinson	Tom W. Stivers, Hutchinson
Republic	P. L. Beiderwell, Belleville	H. D. Doubek, Belleville
Rice	David H. Rau, Lyons	P. E. Beauchamp, Sterling
Riley	Kenneth M. Boese, Manhattan	George S. Bascom, Manhattan
Rush-Ness	F. K. Bowser, La Crosse	R. E. Grene, La Crosse
Saline	G. Sherman Ripley, Jr., Salina	Spencer C. McCrae, Salina
Sedgwick	Clyde W. Miller, Wichita	Paul A. Kaelson, Jr., Wichita
Seward	Otto F. Prochazka, Liberal	Harold Dittemore, Liberal
Shawnee	W. O. Martin, Topeka	Richard Beach, Topeka
Smith	D. A. Hardman, Smith Center	V. E. Watts, Smith Center
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Woodson	A. C. Dingus, Yates Center	H. A. West, Yates Center
Wyandotte	Wray Enders, Kansas City	William W. Abrams, Kansas City

Scientific
ARTICLES

Language and Communication

A Progress Report on the Parsons Research Project

R. L. SCHIEFELBUSCH, Ph.D., and J. E. SPRADLIN, *Lawrence*

THE APRIL, 1958, ISSUE of the JOURNAL OF THE KANSAS MEDICAL SOCIETY outlined a three-year project on Language and Communication* at Parsons State Hospital and Training Center. The description pertained to the origins of the project as conceived by the planning committee made up of representatives from PSHTC, the Menninger Foundation, and the University of Kansas. Included in the outline were a brief description of the project plan and the methods of procedure for the three-year study.

Since this article appeared, a project staff has been assembled and has developed a set of specific research procedures within the general framework of the project. The current report is concerned primarily with the work of the project staff in planning and conducting the pilot phases of the research program.

* "Language and Communication—Outline of a program for Research and Training of Mentally Retarded Children," R. L. Schiefelbusch, Ph.D. and H. V. Bair, M.D., *Journal of the Kansas Medical Society,* Vol. LIV, No. 4 (April, 1958), pp. 137-140.

This is the second article in a series of reports on the Parsons Project, a study of Language and Communication of Institutionalized Mentally Retarded Children. The current report describes the specific rationale, the methodologies, and the pilot studies developed by the research staff. The period covered extends from July, 1958, to September, 1959. Future progress reports will present subsequent data as they become available. The three-year project was made possible by a grant from the Community Services Branch of the National Institute of Mental Health. The grant is administered through the Bureau of Child Research, University of Kansas.

Active Research Phase

At the outset of the active research phase, which began in July, 1958, with the appointment of Dr. Seymour Rosenberg as Field Director, the research staff** inherited a set of five general aims, which

** Dr. Joseph Spradlin, Research Psychologist; Gerald Siegel, Ph.D., Speech Pathologist; Ross Copeland, M.S., Speech Pathologist; Dorolyn Ezell, M.S., Educational Psychologist. Seymour Rosenberg, Ph.D., Research Psychologist was the initial field director but left the project in October, 1959, to take a position at Bell Telephone Laboratories, Murryhill, New Jersey. His role as Field Director is now filled by Dr. Spradlin. Two research assistants, Sanford Mabel and Vincent Bowman, have also been active members of the research project. Both are doctoral candidates at K. U. Dr. R. L. Schiefelbusch, Ph.D. is the project director and H. V. Bair, M.D., Superintendent of Parsons State Hospital and Training Center, is the project co-director.

were set forth in the project grant proposal as follows:

1. The formulation of a set of experimental constructs relative to language and communication as features of social adequacy.
2. Diagnostic assessments which include descriptions of the negative and maladaptive habits and reaction patterns affecting language and communication.
3. The development of a battery of language and communication tests for determining gains made in the training program.
4. The development of specific clinical techniques for improving the verbal behavior of mentally retarded children with particular attention to the various diagnostic classifications.
5. The development of a team program for improving the environmental milieu of the institutional child for purposes of stimulating verbal development. The last-named subgoal represents an attempt to develop creative and motivational experiences in the institutional child's daily activity.

The staff found that these aims provided a satisfactory framework for a long range study, but they soon felt the need to give the ambitious and diversified program a timetable and a tentative schedule of events. There were neither the personnel nor the resources to study, within a research framework, the total communicative environment of the retarded institutionalized youngster. The staff chose, therefore, to give initial priority to (1) the development of a communication test which could be used to assess the functioning level of the children in the project, (2) the development and comparison of several sets of explicit training procedures usable by a clinician, teacher, aide, occupational therapist, nurse, etc., who has had experience with mentally retarded children, and (3) the construction of a theoretical framework from which to derive new methods. It was felt that such a diversified set of research activities could best be evolved in a setting that provided a balanced program of "basic" and "applied" research. The staff conceived that such a balance could be attained within the Parsons research setting, but that the tasks they initially outlined for themselves were formidable indeed. They were motivated in the undertaking by the realization that the balanced program offered the greatest promise for the discovery of new methods of treatment. They readily determined that they faced some lengthy, interactive, and overlapping phases of work that included an exhaustive study of the literature; instead of, discussion and planning sessions by the interdisciplinary team; and, finally, pilot projects designed to bring the staff more intimately into contact with the realities of the research undertaking. These procedural steps were actively used in each of the substantive areas of the project.

Study and Discussion

The team was able to find little direct research literature to facilitate the early planning of the project. In fact, the literature provided neither a good discussion of the basic issues and problems in regard to the language behavior of the retarded nor a sizable number of isolated empirical studies which could survive scientific scrutiny. Mathews, for example, cites a number of studies in the literature which allude to speech-therapy programs for the retarded and notes that *none* of these studies employs an adequate control group. Moreover, many of the traditional and well-accepted terms in mental retardation have a purely connotative flavor and turn to quicksilver under the bombardment of research methods. Concepts like "educable," "trainable," "brain damage," and "multiple handicap," and even "retardation" itself turn out to be administrative conveniences and scientific duds. There is, of course, an extensive literature in the language area pertaining to normal children. Studies of language development in children, however, have been limited almost exclusively to counting and correlational studies, while manipulative studies have received little attention (McCarthy). Most of these studies have been based on a developmental concept. However, the concept of "development" also has been re-examined recently, and the literature in this area has been evaluated in the light of new methods, findings, and scientific philosophy (Harris). The theoretical formulations of language have been subject to historical influences which often lead to the confusion between *verbal behavior* as an act of a person and *verbal behavior* as a conceptual system of scientists. These conceptual inadequacies have been discussed by Kantor, Miller, and Skinner.

The current state of the literature, the goals of the project, and the demands of rigorous research have involved the project staff in a number of difficult and prolonged discussions. Members of the staff have made agonizing reappraisals of their everyday concepts of language and mental retardation and have come to grips with the problems of designing both meaningful and rigorous research in this area.

As a result of additional months of planning and increased attention to the empirical pilot phases of research, the substantive areas of the project are now sufficiently well developed to be reported. The following sections are capsule reports of the *Parsons Language Sample,* the *Methods for Developing Verbal Behavior,* and the *Conceptual System.* The authors hope that these brief reports will serve to project a sagittal view of the research project now in operation.

The Parsons Language Sample

When the staff began to plan specific research investigating various methods for increasing language

in mentally retarded children, the necessity for evaluation procedures was apparent. The need for a quantitative estimate of language functioning is required when children are selected for an experimental treatment and when the effects of an experimental treatment are being evaluated. The first step in the development of such measures is the delineation of the area included by this term. A definition proposed by Skinner has been tentatively accepted: *Verbal or Language behavior can be defined as behavior which is rewarded through the actions of other persons.* Defining verbal behavior in this way seems desirable for at least three reasons. First, it brings investigation of language in line with the study of nonverbal behavior as a dependent variable subject to the control of events external to the person. Second, it does not limit language to speech or vocal responses but includes nonvocal or gestural language. Third, the definition demands that language be considered as an interpersonal or social process.

The next basic question is the systematic construction or selection of items which are representative of the various interpersonal situations into which the child can be placed. Ideally, a language sample should include samples of the child's verbal behavior in various social situations. This procedure is obviously unrealistic. The present sample uses an adult examiner on the tentative assumption that the child's language in this situation correlates with his language in other situations. This assumption will be tested with a series of empirical studies, which have in fact already begun.

An attempt has been made to obtain a representative sample of language behavior by classifying the behavior and then by sampling each behavior class. A brief description of the major classes of language behavior sampled follows:

Mand Behavior. Mand behavior includes demanding, commanding, requesting, and asking. Since these conditions occur frequently in interpersonal situations and frequently pertain to wants or needs of individuals, they are assumed to be rather important in communication behavior.

Tact Behavior. The tact subtest requires the subject to name a series of objects and pictures. The examiner holds each object or picture in view of the child and asks, "What is it?" In the case of the tact, the appropriate response is under the control of object or picture stimuli. That is, the specific responses would not occur if the pictures or objects were not present.

Echoic Behavior. One of the more simple and primitive types of echoic behavior is the echoic response or repetition response. Echoic responses are so much reinforced by the parents and teachers of children in the early years of life that there is usually a tendency for them to echo any verbalization upon request.

Intraverbal Responses. Intraverbal responses are primarily under the control of verbal stimuli but have no point-to-point correspondence to them. For example, one person's "Good morning, how are you?" is a discriminative stimulus for "Fine, thank you." Or, a person's "2 + 2 =" is the discriminative stimulus for four. In other words, stimuli produced by other verbal responses are the occasion for the intraverbal response.

While the examples given above in illustrating mand, tact, echoic, and intraverbal behavior all involve vocal behavior, gestural behavior may also be classified according to the same system.

At the present time we are at the third revision of what may be a long series of revisions in the development of an adequate language sample. From the first three stages has evolved a brief test-like situation which attempts to sample language behavior from each of the major classifications. Language responses are arbitrarily classified as appropriate or inappropriate by the test constructor. A more rational qualitative classification system is now being developed. Data are already being obtained to determine: (1) the degree of intersubtest correlations, (2) the degree of test-retest split-half reliability, and (3) the degree of validity for predicting behavior in nontest situations. Moreover, data have been obtained to determine whether different examiners obtain similar results when using the test.

Methods for Developing Verbal Behavior

There are two or three discernible trends in current language-training programs of retarded children which constitute a background for the research project. One appears to be the use of drill methods to procure from the child a well-articulated word or phrase in order to increase the verbal repertoire of the child or in order to reduce inadequacies in the words the child already uses. These methods are perhaps derived from traditional methods of the speech correctionist. Another trend is the use of a large quantity of talk around the child in the form of stories, naming objects in pictures, and talking about activities in which the child is participating. These methods have been largely adapted from the educational procedures and principles used for normal children. Both types of training methods involve certain assumptions which are questionable. The drill method presupposes that the child has developed speech but that it must be "polished" or made articulate by drill methods. Since this is not true with a large number of retarded children, the drill method is often unfeasible. The educationally derived talk method tends to place the emphasis on the teacher's speech output rather than on the child's output.

Most recently, there has been an increasing emphasis upon the social aspects of language behavior. This appears to be a healthy supplement to traditional

methods. That is, the emphasis in language development is slowly being shifted from the perfection of articulation or the enlargement of vocabulary *per se* to the acquisition and use of language in interpersonal settings. Speech and language behavior are assumed to be acquired because they are rewarded by the activity of other persons. There is also an increasing emphasis upon the training of listening behavior for the child. This appears to provide some necessary balance for interpersonal use of language since verbal behavior is a sequence of rather rapid alternations between speaking and listening.

It is not surprising to find that there are in the literature virtually no scientifically adequate studies describing and evaluating any of these treatment methods. A consideration of two of the methodological aspects alone exposed a horrendous set of problems for the research team. First, there is the problem of developing effective training methods which can be subjected to laboratory scrutiny and eventually be communicated readily to teachers, therapists, and aides. Second, the specific effects of these training methods on the children must be evaluated and analyzed.

Types of Method Studies

The following paragraphs present a brief description of the types of method studies from which usable procedures can eventually be derived. The studies serve as pilot projects designed to provide useful glimpses of both method and theory needed for evolving a scientific approach to language training.

The learning situation which has been given most research attention to date is one in which **an adult is assembled with a small group of children** for a short period of time each day. These sessions are repeated five to six days a week for a month to a year or more. This type of situation is seen to exist, not only in the classroom, but also in the cottage with an aide, in recreation, and sometimes in occupational therapy. Whatever "principles" of language stimulation would be applicable to any of these group settings involving a "pre-instructed" adult should be applicable to all. A pilot study was first executed using Mrs. Ezell, a research member of the project and a former teacher of retarded children. The sophistication gained from this pilot study permitted the planning of much more elaborate studies using hospital aides in the adult role. These persons serve as the "pre-instructed" adults who meet with a small group of children for a series of language-stimulation sessions. The study itself takes place in a room in which recordings and unobtrusive observations can be made. The purpose of the study is to compare the differential effects of three types of instructions to aides on language development of the children and on differences in aide behavior.

In another learning situation, methods for improving comprehension or understanding were evaluated. This study was similar to that described above insofar as an adult met with three children. It was different insofar as each of four teachers met with two groups of children. The goal of both methods was to teach severely retarded children the meaning of certain words which occur very frequently and which are considered basic to everyday communication. These words were drawn from Thorndike's most frequent 500 words. Words were set up in pairs of opposites such as over-under, stop-go, to-from, etc. One method of teaching involved simply telling the child whether he was right or wrong. The other method involved simply naming the correct response.

A second type of situation now being studied is one containing **an adult and a single child.** This type of situation allows a precise analysis of the interactive process between the adult and child and the exploitation of practices which are not feasible in the small-group context. One such experiment concerns the question of how a relatively naive adult reacts to a verbally retarded child. The study focused primarily upon the kinds of questions adults ask a retarded child. It was hypothesized that an adult interacting over time with a retarded child will tend to ask questions which require little of the retarded child. If this hypothesis is found true it would seem likely such behavior on the part of the adult tends to perpetuate speech retardation. A second study involves the use of electronic instruments to increase the attention or "awareness" level of low-function children for their own vocal production. It is assumed that many of these children have not learned a necessary concomitant of communication, *i.e.,* listening to their own and others' speech. An attempt is being made by Copeland in some pilot research to increase the attention level of low functioning children (with unimpaired hearing) by various accentuating devices in the auditory feed-back channel. There are also plans for additional adult-single child settings which will involve manipulations not feasible in any other setting.

A third communication setting under study involves **children interacting with each other** where no adult is in the immediate sphere of interaction. The playground, cottage, and dining room provide many such instances. Children tend to choose certain other children rather consistently (sociometric choice) in these settings, and it would be surprising if such consistent choices did not affect the communication development of the children. For example, it has been noticed that higher-level children play with children of similar level in organized play, while lower-level children are involved neither in organ-

ized play nor in play with each other. This social process could tend to perpetuate or "freeze" the functioning level of the children at their respective levels. A study is now under way in which children of various functional levels are experimentally assembled for short play periods and the effects on communication behavior noted. Preliminary results of this study are described by Rosenberg. Methodological sophistication for such studies is readily available from the social psychological literature (Rosenberg). The practicality of contrived assemblies of children in various structured situations as a new way of improving communication skills of retarded children will continue to receive considerable attention on the project.

The method studies involving an adult and several children are being used both for development of theoretical concepts involved in group processes and as applied studies of training procedures. The studies involving an adult and a child, together with studies involving children interacting with each other, are primarily designed to aid in developing a conceptual system for understanding language behavior.

Conceptual System

It would be rather pretentious to say that the language-training procedures briefly described above are being derived from theory and that they can be wholly described within a theoretical framework. However, a rationale does permeate much of the thinking about training procedures (Rosenberg and Schiefelbusch). The conceptual description of language development is presented only in summary form here.

Language behavior, like other behavior, needs to occur, however imperfectly, before it can be shaped to conform to cultural norms. If the child is not already emitting a large amount of vocalization, one has to contrive a series of conditions which will increase his output. Thus, the materials of the adult, the *talk, talk, talk* of the teacher (Baumgartner), the assembly with other children in a variety of settings, and the use of pleasant or unpleasant situations, will be assessed according to their effectiveness in eliciting vocalizations, no matter how primitive these vocalizations may be. Having set some occasions for the occurrence of vocalization, the situation must then provide to the child rewarding consequences for his performance. It is assumed that the consequences of any behavior play an important role in the development of that behavior. It is further assumed that language behavior is subject to the same general principles as other behavior. Some consequences which a situation provides following a vocal production would appear to be highly effective in perpetuating the interaction either between an adult and a child, between children under adult surveillance, or between children alone. The perpetuation of interaction would then permit the further shaping of the behavior of the child. Other consequences might be detrimental to this interaction. If, for example, the adult (or other child) imitates, smiles, says or does anything following a vocal production which is rewarding to the child, this should tend to perpetuate the interaction, whereas asking What?, demanding clarification, or failing to respond may gradually decrease the occurrence of that response. The latter approach may, of course, be quite helpful at some stage of learning to produce unlearning of some undesirable response as long as it does not decrease all communicative behavior.

Selection of What Is Rewarding

At some point in this learning process, the adult (or the social processes occurring in the situation) must become selective in what is rewarded and how it is rewarded so that behavior begins to conform to cultural norms and begins to occur in appropriate contexts. Unfortunately, we still know little about the intermediate stages of behavior for the retarded child which will take him from primitive vocalization to articulate, appropriate speech. At any rate, the acceptance of any random noises by another person at the early stages of the learning process does not mean that these noises ought to be accepted later. They must gradually become associated with specific stimuli, either within the situation in which the action is taking place or in any past situation which the child had experienced. The selectivity of the adult, for example, must be contingent upon the child's progress rather than upon a pre-set schedule. Note also that the selectivity of one adult of certain behaviors must be consistent with the selectivity of other people with whom the child comes into contact. Such is the rationale for the eventual consideration by the research program of all aspects of the child's life, *i.e.*, the classroom, the cottage, the playground, the clinic.

Trained to Listen

So far the discussion has emphasized the production aspects of communication. To complete the account it is necessary to add that the child must also be trained to listen. As with speaking, one needs to create, first of all, situations which will assure that some kind of listening behavior occurs. Various methods are possible. Games in which someone describes the hidden location of objects known to be rewarding to the child may increase listening behavior. At first, these descriptions may have a strong gestural component (since these are presumably easier to learn), which is then gradually dropped out. Other situations for producing listening could be the same as those which elicit talking. Still others may be necessary, such as music, to produce the most basic com-

ponent of listening behavior—a relatively inactive and quiet poise. The study mentioned in the preceding section, in which electronic mediation of the speech environment is used to increase "attention," may also be effective with the very low functioning children. From these methods would gradually come a shaping up of the more complex listening behaviors which we generally term "understanding."

It is necessary to note explicitly that this conceptual scheme of language development emphasizes the fact that language development is derived from contact in interpersonal situations. The units of analysis (dependent variables) for many communicative situations are, therefore, the relationships between the behavior of two or more individuals rather than the dependent variables concerned exclusively with the performance of the child in these situations. Also, the independent variables are described in terms which specify the situations created both for the children and the adult. An attempt to describe the independent (manipulable) variables of learning for the child alone ignores the fact that communication is an interpersonal system. Thus, manipulations for optimal learning are described for the interpersonal system rather than for the child alone in a physical environment. An interpersonal approach suggests the possibility that adults, no matter how well instructed, may not be impervious to subtle social processes which may slowly change their behavior as teachers or therapists within the interpersonal setting. A general discussion of this approach to learning situations as social systems is given in a paper by Rosenberg, and its specific application to mental retardation is discussed in the paper presented at the A.A.M.D. meetings (Rosenberg).

Plans for the Future

Each member of the project staff has now completed a sizable amount of exploratory research in his area of responsibility. In some instances it has been possible to design and execute systematic, publishable research as a result of the pilot work. In the case of other problem areas, it is apparent that more exploratory-type activity will be required. The plans for the immediate future include, therefore, a variety of work ranging from preliminary probings into problem areas to the execution of very specific studies. These plans are organized into each of the areas described in the previous section and are outlined briefly as follows:

1. The staff will continue to develop the language battery with special attention to (a) providing additional validation situations, (b) the measurement of verbal learning aptitude, intraverbal structure of the child's verbal behavior, and spontaneous output of vocalizations.

2. The feasibility of developing language-stimulation methods in the classroom, cottages, and during recreation will be explored further. The use of aides, described by Ezell, will continue within the laboratory setting, providing the opportunity to perform detailed analyses of the processes involved in such small group settings. The assembly study described by Rosenberg will be enlarged to include new situations or task variables. Copeland's pilot study on feedback alterations will be enlarged into a systematic research study. Finally, the adult child relationship as described by Rosenberg will be more fully explored.

3. The consideration of articulatory variables as they may relate to verbal behavior, currently in the initial planning phase, will also be explored more fully.

4. A series of laboratory research studies has been initiated to provide the project with important conceptual and methodological tools. A series of empirical studies is now under way, for example, to compare the reward properties of various social and nonsocial stimuli. A theoretical paper which attempts to handle learning variables in interpersonal situations is being outlined currently and will be completed for publication soon. This paper will integrate and expand the ideas presented in previous papers (Rosenberg). Improved methods for observing and recording verbal behavior of the children in a variety of laboratory and natural settings receive continuing attention by all members of the project.

University of Kansas
Bureau of Child Research
9 Bailey Hall
Lawrence, Kansas

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College Campus Psychiatry

A Campus Psychiatrist Raises Some Questions

H. G. WHITTINGTON, M.D., ***Lawrence***

FOR THOSE OF US who cannot decide whether we are no longer young, or already old, the uncertainty and turmoil of adolescence seem a negligible price for the promise of an unencumbered future and the vigor of youth. I can no more expect to convince my readers, as they hear senescence creeping up on them, that the college years are fraught with emotional crises and filled with unhappiness; than I might expect to persuade college students that aging is like the mellowing of a good wine, or that "life begins at forty"! Rather, I hope to point up the problem of empathy arising from the difficulty that the older person has in discarding nostalgic fantasies about the blissfulness of youth. Empathy is not an end unto itself; but is a beginning toward identifying and helping emotionally disturbed young adults.

Was the Pioneer

Kansas was a pioneer in college mental health services. Dr. Karl Menninger initiated a mental hygiene program at Washburn College in the early 1920's, at a time when only a few colleges were aware of the contribution that psychiatry could make to higher education. Beginning in 1938, psychiatric consultation was available at the Student Health Service of the University of Kansas; and since 1948 a Mental Health Clinic has offered psychiatric evaluation and treatment to students. Unfortunately, such facilities are not available at other universities throughout the state.

Each academic year, about four per cent of the total enrollment is seen in the Mental Health Clinic. A small number are evaluated under the foreign scholarship program. The remainder, most of them self-referred, consult the staff for a variety of emotional problems: acute situational reactions, as a depression following the breakup of a romance; anxiety reactions, stemming from situational and endopsychic, unconscious conflicts; personality problems that prevent the student from enjoying himself, his work, and other people; marital conflict; academic underachievement; psychosomatic illness; psychosis; organic brain damage—the full range of psychiatric illnesses, except for the diseases of old age. An evaluation, consisting of a series of psychiatric interviews, psychological testing, and interviews with parents or faculty (if such seem indicated and if the student consents) leads to specific recommendations: rarely, for hospitalization, either at the Student Health Service or elsewhere; occasionally, for tranquilizing medication; most often, for individual or group psychotherapy.

1. Why don't local physicians refer their patients, now students, to the Campus Mental Health Clinic?

2. What are the attitudes of doctors toward teenagers, adolescents and particularly college students?

3. Do college students need tranquilizers?

Often the Family Physician Sees First

The family physician has often been consulted by the parents before we see the student. He has listened to the parents' concerns. He has talked with the student. He has performed a physical examination, done a few lab studies, and has found the youngster appallingly healthy. And yet, of the over 500 students seen during the 1957-58 and 1958-59 school years, *only one was referred by a local physician!* How are we to understand this?

Are physicians reluctant to refer a patient to a "head-shrinker"? Although it is true that practitioners from many sections of Kansas do not have an opportunity to work closely with a psychiatrist, and thus to experience the impact that advances in psychiatric knowledge have made on clinical practice, I doubt that prejudice or ignorance accounts for the rarity in referral of college students for help with emotional problems.

I believe, instead, that the problem lies in a difficulty which the physician experiences in empathizing with the young adult. The same doctor who is quite alert to neurotic problems in his adult patients is often quite insensitive to even greater emotional turmoil in adolescents. We all remember, more or less, many of the *events* of adolescence. What we forget, often repress completely, are the painful and intense *emotions* that characterize this age. We forget

Dr. Whittington is director of Mental Health Clinic, Student Health Service, University of Kansas, Lawrence, Kansas.

what it feels like to be away from home for the first time; to be jilted by a girl; to be laughed at by one's friends; to not know what to "become"; to be lectured by an overly concerned father on weekends, or pampered by an anxious and lonely mother who is afraid that she is loosing her "baby." We forget, in fact, all the exquisite self-torture, confusion, and doubt of our young patients. Remembering quite well, however, the indecision and concern of parenthood, the physician often identifies with the more punitive attitudes of the parents, and proceeds to admonish, lecture, exhort, cajole, and shame the student, who has already been liberally dosed with such medicine at home. Strong advice *can* help, of course, but only if certain conditions are met: if the recipient is absolutely sure that the advice is in his best interests, impartial, not motivated by personal needs of the donor, and is reasonably learned.

Frequent Complaint From Parents Is Grades

A frequent concern of parents, one they often take to their family physician, is their child's poor scholastic work. The physician can serve an invaluable function as a source of good common sense. *The most frequent cause of poor academic achievement is low academic ability.* Many students who attempt, often at parental urging (the individual is usually more realistic about his own abilities than are the parents), to obtain a college education, are simply incapable of doing so. Academic ability is a function not only of intelligence, but of prior educational experiences; for example, an individual who reads at only a sixth grade level is severely handicapped in a university. At the University of Kansas, the Guidance Bureau, staffed by educational psychologists, administers a testing program to measure academic achievement; these scores are supplied to the students' faculty advisors, and counselling and remedial clinics are provided by the Guidance Bureau staff if the student requests help.

Motivation for further education is often lacking. Is the motivation that of the parents to have a college-educated child? Or of the student, to achieve certain personal goals? Often the young person's solution is to get away for a while, to work or join an armed service, and decide later if a college education is something he really wants. Such an idea brings out, invariably, the tired old stories about so-and-so, " . . . who left school and never came back. Boy, is he sorry now!" An individual who has the ability, however, with an opportunity to mature and to clarify his own motivations without parental pressure, usually *does* complete his education. The parents' guilt, their concern that they have somehow "failed" their child, often force them to act, when inaction and acceptance is the better course to follow.

False Starts Are Usual

One or two false starts, with changes in major or career goals, are not unusual in college students. Such changes do not necessarily indicate irresponsibility, rebellion, or capriciousness. In such a marvelously complex society as ours, the miracle is that anyone *ever* ends up in the right career. To be open for change, even if it means going against parental wishes, is healthy and not to be stifled.

Often, though, academic difficulty may have other meanings. If, for example, the parents tell of a long-standing pattern of inability to follow projects to completion, poor academic achievement in secondary school, vagueness about life direction and goals, associated with evidences of good intellectual endowment (which is not *necessarily* correlated with the wealth or social prominence of the parents), one must begin to wonder about a chronic personality disorder; only a careful and thorough evaluation of psychological functioning can lead to an understanding of the genesis of the disorder, or to a decision about the best treatment. An hour consultation with a psychiatrist is of little use in such cases; six hours with a psychiatrist and as many being tested by a psychologist, are more likely to clarify the emotional impediments to learning and achievement, and offer hope of establishing a rational treatment plan.

A sudden drop in grades, after previous good accomplishment, communicates that the individual is experiencing some sort of inner disequilibrium. Perhaps falling in love, perhaps the onset of a psychotic breakdown: both mild and transient, and more severe emotional upsets may interfere with academic accomplishment. The general physician, the guidance counsellor, or the psychiatrist can, and should, ask what is wrong and how the young person can be helped to reinstitute homeostasis at a higher level of functioning.

The emphasis, so far, has been on academic achievement, grades, and the ability to learn and to retell on examinations. This, of course, is only one aspect of total personality functioning, a facet that is highlighted in college, but one no more important than the ability to maintain peace with oneself and with one's fellowmen. A good student is not necessarily an adequate, a happy, or a well-adjusted individual; nor is a scholarly, somewhat aloof person with only a few friends necessarily maladjusted, strange, or a subject for psychiatric examination. In a large school such as the University of Kansas, it is possible, however, for isolated and confused individuals to be overlooked, not recognized as emotionally ill. For those living in university housing, the excellent counsellor system supervised by the Dean of Students provides an opportunity for casefinding and

early, atraumatic referral to the Mental Health Clinic. One of our research interests is in improving upon methods for early casefinding, perhaps by the routine administration of psychological tests to all entering freshmen. However, it is too soon to say what methods will meet the criteria of adequate sensitivity, validity, clinical functionalism, and practical expediency. There will never be a test or battery of tests that will replace the intuition and judgement of the clinician, however; often the local physican will know long before the University that a particular student is experiencing adjustment problems.

The Role of the G.P.

Is the general physician only to function in casefinding and referral for specialized psychiatric services? By no means. Support and encouragement for the student, and a chance to talk to a kindly person who listens more than he advises, combined with reassurance for the parents, will allow the resolution of most emotional upsets in adolescence and early adulthood. For chronic problems, or severe psychological decompensation, the Mental Health Clinic at the Student Health Service may be the appropriate agency for referral. Since our function is primarily one of evaluation and short term therapy, we will often refer students to public or private treatment resources.

The use of medication for emotional problems in young adults is a question of great relevance for the practitioner. It is our experience that ataraxic medication has little to offer in the psychiatric treatment of this population, and if used should be only for a week or so to allow a helping relationship to be established with the physician. Only by not routinely using tranquilizers will the practitioner remind himself of what he may have forgotten: that *he* is the most powerful psychic medicine of all, and that the therapeutic use of himself is the greatest challenge to his skill as a physician and as a compassionate human being. It is not at all unusual for us to see tense, worried young people who are gulping down a bewildering array of medicaments: thyroid (for fatigue), "Equanil®" (to counteract the iatrogenic hyperthyroidism), "Ritalin®" (to counteract the pharmacologic somnolence), shot-gun type anemia medication (to counteract the poor diet that no one ever asked about), an anti-spasmodic (to dull the hunger cramps), and assorted capsules, pills, and potions, of divers colors, with stripes, multicolored granules, polka-dots, etc., all to treat various esoteric dysfunctions that the student vaguely describes—and quickly forgets, along with all the pills, when given an opportunity to talk with an empathic adult, who is not critical or condescending, and who is not so terribly grown up that he is unable to remember how it felt to be young. The drug companies, for all their wondrous advances, have not discovered a cure for youth.

Our policy, which is that of the Student Health Service as a whole, is to serve as a substitute for the family doctor while the student is away from home. It is not our wish to usurp the position of the private physician. We routinely communicate to the physician, then, if the student consents, the outcome of our evaluation and our treatment recommendations, as well as asking him to share his findings with us. Only by such a cooperative venture can the special needs of the young adult with emotional problems be adequately served.

University of Kansas
Student Health Service
Watkins Memorial Hospital
Lawrence, Kansas

Language and Communication

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* The starred items are papers resulting directly from grant support.

Note: Copies of the Milwaukee papers may be secured by writing to the Bureau of Child Research, 9 Bailey Hall, University of Kansas.

Because of its very intimacy, marriage more than any other human relationship, can bring out the worst in people or the best. It may turn two normal human beings into cynical, discontented and contentious members of society; on the other hand it can—often does—take two inexperienced, undisciplined young people and mold them into unselfish, kindly, responsible citizens.—*Agnes Sligh Turnbull*

Statistical Inference

The Use of Statistical Theory in Medical Research

HARRIS WINITZ, Ph.D., *Kansas City*

A brief consideration of the theory of statistical inference in medical research is presented. The term *probability* and some commonly used statistical tests are discussed.

THE PURPOSE OF THIS paper is to present the underlying logic for the application of statistical theory to medical research. Some common statistical tests will be discussed. It is best to begin by defining the following four terms: population, sample, parameter, and statistic.

Population: The aggregate or totality of objects about which we wish to draw some inferences.

Sample: A part or subset of the objects of a population.

Parameter: The figure for the population.

Statistic: The figure for the sample.

The above terms will be employed in an example to demonstrate the use of statistical inference. If one wished to know the average height of six-year-old boys living in the United States and if it were economically feasible to measure all boys of this age reliably (without measurement error) this figure could be ascertained with complete certainty. The figure obtained would be the population value or parameter. Unfortunately this procedure would prove to be highly impractical.

Approximate With an Average

It is possible, however, to approximate closely the population value (true average or mean) in a less costly and exacting way. One could select a group of six-year-old boys as a sample and measure the height of each boy. The mean figure would be the sample value or statistic. If the selection process were done on a random basis one could be reasonably certain that the sample value would approximate the population value. Random selection implies that factors, such as physical health, race, etc., peculiar to the population would have an equal chance of being present in the sample. Also as the number of subjects is increased the likelihood that the sample mean will approximate the true mean is also increased. However, how certain could we be?

At this time it is best to introduce and define the term **probability.** The probability of an event is the relative frequency (based on an infinite number of trials) of that event in the universe of events that are under consideration. Thus the probability of obtaining spades from sets of four cards chosen from decks of playing cards is 25 per cent. That is, if four cards were sampled over and over again from a large number of playing-card decks, one-fourth of the cards would be spades. In any of the four-card samples there may be zero, one, two, three, or four spades, but when all samples of four cards (four $\times$ no. of samples) are considered the expected percentage of spades would be 25 per cent and that of non-spades would be 75 per cent. If a deck of playing cards contained 26 spades and 26 non-spades, infinite sampling from decks of cards would produce 50 per cent spades and 50 per cent non-spades.

The Chance Factor

Such theory can be applied to the height example. If 100 groups of six-year-old boys, each composed of 50 boys, were randomly selected and the mean height of each group were computed, the means would distribute themselves in a normal or approximately normal fashion (bell shaped curve) around the true mean. The frequency of sample means that approximated in value the true mean would be far greater than sample means which were considerably larger or smaller than the true mean.

Now if one wished to determine whether six-year-old boys were taller than six-year-old girls, two groups of children (30 boys and 30 girls) of this age level would be randomly selected and the difference between means computed. From our previous discussion one would expect the mean differences of a large number of paired samplings between boys and girls to distribute themselves in a normal fashion around the true mean difference. Very large differences favoring girls or very large differences favoring boys would occur by chance very infrequently. A difference of such magnitude as to occur by chance five per cent of the time or less has been traditionally used in psychological research to indicate a statistically significant difference. The logic is simply this. If a difference this large or larger could occur by chance five per cent or less of the time it would not be suspected that the difference obtained in a single experiment was this rare event which had occurred by chance. The difference between means may be due to

chance, but it is highly unlikely. It is then concluded that there is a "true" difference between sexes and that the difference is statistically significant at the .05 level of confidence. The selection of the level of confidence is a strictly arbitrary matter, depending upon the objectives of the investigator.

Major Tests Used

Some of the more widely used statistical tests in research are the t test (t), analysis of variance (F), and chi-square test (χ^2). When comparing group differences based on mean values the t or F test is used. Analysis of variance is appropriate when more than two groups of subjects (or more than two treatments for the same subjects) are studied. The χ^2 test is applicable when data have been categorized into responses referred to as nominal grouping, *e.g.* "feel good," "feel bad," "no change."

Illustration

One example will suffice as an illustration of the application of statistical inference to data. An investigator wishes to study the effect of drug X on dysphasic speech responses. He chooses as his criterion measure the number of correctly spoken words in two situations: with drug and without drug. Forty words have been randomly chosen from a list of the 5,000 most commonly spoken words in English. Each of the 40 words is printed on a different card. Thirty dysphasic patients who have been ascertained as having no visual problem are randomly selected from a rehabilitation center. Presentation of drug (drug X and placebo) is rotated for each subject. (One could also select two 40-word lists and counterbalance drug and word list effect.) He sets his level of confidence at .05.

The examiner finds that under placebo a mean of 22 words is said correctly and that under the effect of drug X a mean of 26 words is said correctly. The drug appears to affect speech performance as defined by our experimental procedure. However, a t test is applied to the data and the obtained level of confidence is 30 per cent, *i.e.*, a difference this great or greater may occur by chance 30 per cent of the time. Since the difference is not statistically significant at the .05 level the experimenter retains the null hypothesis (hypothesis of no difference) and concludes that it appears tenable that the drug has no effect on speech performance.

Department of Hearing and Speech
University of Kansas School of Medicine
Kansas City 12, Kansas

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WICHITA
1961

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KMS STATE MEETING

May 1, 2, and 3 **Broadview Hotel**

Right Hemiparesis, Garbled Speech, and Pain in Chest, Abdomen, Back, and Extremities

Case Presentation

A 49-YEAR-OLD WHITE MAN with speech difficulty and facial and right arm weakness was admitted to KUMC for the first time on August 19, 1958. In February, 1958, he had had an acute onset of pain in the upper abdomen and back which lasted for about three months. He also had numbness and pain in the right arm which radiated to the tips of his fingers when he raised his arm above his head. In April he developed hyperesthesia of the right chest from the back to the sternum; this increased during the following months, becoming so severe by August that it interfered with his sleep. On August 10 he developed pain in the lower abdomen and back associated with a feeling of urinary urgency. The pain was relieved by an injection. At that time a urinalysis was reported to have been negative. The following day he had general malaise and chest pain. At that time an x-ray of the spine was interpreted as being negative.

On August 14 (five days before admission) the chest pain recurred, and on August 16 he had pain behind his left ear and left parietal occipital area for about three hours. After breakfast on the day before admission he had upper abdominal pain, nausea, and vomiting. After an enema and several hours of rest he sat up and attempted to talk, but his speech was garbled and he had a short episode of choking. There was sagging of the facial muscles on the right, and his right arm was weak. He was able to eat, but his appetite was poor.

In 1956 a skin cancer on his nose had been treated with roentgen radiation. In early December, 1957, he had several episodes of blackout spells which occurred on bending and occasionally while he was driving. He had no history of headaches. He had had no other serious illnesses or operations. He was allergic to sulfonamides.

One brother had questionably died of a cerebrovascular accident, but his family history was otherwise not remarkable.

PHYSICAL EXAMINATION

The patient was a well developed, well nourished white man who did not appear to be in acute distress. His blood pressure was 140/70, and his pulse rate was 80 per minute and regular. There was a grade II arteriosclerotic retinopathy; the pupils were normal and reacted to light and accommodation. His ears, nose, and throat were normal. There were angiomata on his chest. The abdomen was normal except that the cutaneous abdominal reflexes were absent bilaterally. There was right hemiparesis with impaired equilibrium manifested by falling to the right during which the right arm was not held out. Sensory tests were unsatisfactory. The cranial nerves were not remarkable except for the speech problem and paresis of the right side of the face.

LABORATORY

The urine had a specific gravity of 1.011, an acid reaction, no sugar or albumin, and one to three pus cells per high power field. The hemoglobin was 13.9 gm. per cent, and the hematocrit was 45 ml. The white count was 16,050 with a normal differential. The serologic tests for syphilis were negative. The blood urea nitrogen was 21 mg. per cent, and the fasting blood sugar was 76 mg. per cent. The prothrombin time was 47 per cent of normal, but it was checked five days later and found to be 75 per cent of normal. The spinal fluid was crystal clear; the colloidal gold curve, normal; sugar, 73 mg. per cent; total protein,

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Edited by Jesse D. Rising, M.D. and Mahlon Delp, M.D. from recordings of the proceedings of the conference participated in by the departments of medicine, pediatrics, surgery, radiology, and pathology of the University of Kansas Medical Center as well as by the third and fourth year classes of students.

58 mg. per cent. The sedimentation rate was 22 mm. per hour. Liver function tests were normal.

HOSPITAL COURSE

The patient complained of pain in his right shoulder, anterior chest, and lower abdomen at various times and of variable duration. Because of his inability to speak clearly it was difficult to evaluate his complaints. Medication afforded only partial and inconsistent relief from the pain. He was seen by the Hearing and Speech Department for speech therapy and by the cardiovascular and orthopedic sections. On the 27th hospital day he complained of pain in his chest, left shoulder and leg. On the following day he appeared to be somewhat improved, but the next day he was confused and acutely ill. He had several episodes of vomiting, but there was no blood in the vomitus. At that time his temperature was 100.4 degrees; his blood pressure was 80/79; the pulse rate was 100 and irregular. There was a gallop rhythm. A blood culture taken at that time was negative at ten days. His blood pressure continued to drop despite medication, and he died at 11:00 o'clock in the morning, September 17, 1958.

Dr. Mahlon Delp (moderator): Are there any questions?

Quentin Huerter (student)*: Did he experience any chest pain during the ten days before admission, and, if so, did he require injections?

Dr. Delp: He had some chest pain for which he received injections of cyanocobalamin.

Wilber Voss (student): Was he right or left handed?

Dr. Wu-Hai Tu (resident in medicine): He was right handed.

Mr. Huerter: Did he have aphasia or dysarthria?

Dr. Tu: He had aphasia.

James Nelson (student): Were his words understandable?

Dr. Tu: No, they were not.

Norman Harris (student): Were the heart tones normal on admission?

Dr. Delp: Yes.

Russell Odegard (student): Did the chest pain increase on exertion?

Dr. Delp: There was some indication of increased pain, but he also had pain when at rest.

Mr. Harris: Was there a history of weight loss?

Dr. Delp: No.

Mr. Huerter: Were there any repeat urinalyses?

Dr. Delp: No, there was only one urine examination.

Mr. Huerter: Was the hemoglobin constant throughout his hospitalization?

Dr. Delp: Yes, it was.

Lawrence Perry (student): Will you describe his facial weakness?

Dr. Delp: The weakness involved the lower part of the right side of his face.

Mr. Odegard: Was there any petechiae or splinter hemorrhages?

Dr. Delp: No.

Mr. Voss: Were angiomata found any place other than on his chest?

Dr. Delp: No, and there were none on his chest; the description was that of spider angiomata.

Don Hunninghake (student): Did he have fever at any time other than on his last day?

Dr. Delp: No. He had fever only on his last day.

Mr. Odegard: Did the hemiparesis disappear at any time?

Dr. Delp: No, it did not.

Mr. Voss: Were the deep tendon reflexes on both sides equal throughout his hospital course?

Dr. Delp: Deep tendon reflexes were three plus on one side, two plus on the other side and constant.

Mr. Odegard: Were bowel sounds present at all times?

Dr. Delp: There was no indication of absent bowel sounds.

Mr. Odegard: Was there any melena?

Dr. Delp: No.

Mr. Huerter: Do you have any more information about the growth which was removed from his nose in 1956?

Dr. Delp: We accepted it as being a skin cancer. Do you believe it could have been something else?

Mr. Huerter: It may have been a malignant melanoma.

Mr. Harris: Were there any murmurs in the carotid area?

Dr. Delp: No.

Mr. Harris: Were the patient's legs examined on the day before death?

Dr. Tu: Yes, but there was no sign of thrombophlebitis.

Dr. Delp: If there are no more questions, we will now have the electrocardiograms.

Electrocardiograms

Mr. Harris: The first electrocardiogram *(Figure 1)* was taken on September 15, two days before death, and shows a sinus tachycardia with a rate of 130 per minute. There are frequent ventricular premature contractions throughout numerous leads, and there is a current of injury in leads I, aVl and in the chest leads. There are deep T waves in the chest leads and suggestive Q waves in aVf and lead II. I interpret this tracing as an acute anteriolateral myocardial infarction. I can not rule out the possibility of an old

* Although a student at the time of this conference in January, 1959, he, like the others referred to as students, received the M.D. degree in June, 1959.

Figure 1. Electrocardiogram taken on September 15, two days before death.

myocardial infarction indicated by the Q waves in aVf and lead II.

The second tracing *(Figure 2)* taken on the day of death still shows a sinus tachycardia. There is evolution of the myocardial infarction as shown by the S-T elevation in numerous leads and the current of injuries over the chest. The P-R interval is prolonged. I interpret this tracing as evolution of an anterio-lateral myocardial infarction; however, the elevated R waves over the chest leads were not present in the previous tracing, so I can not rule out right ventricular strain.

Dr. Delp: Dr. Crockett, may we have your comments?

Dr. James E. Crockett (cardiologist): These tracings undoubtedly show the progression of changes in an anterior infarction which has extended into the lateral surface of the left ventricle. In regard to V_1 we must be aware of the result of acute right heart strain. That, however, would be the result of a delayed right ventricular depolarization which in itself could be secondary to the extensive anterior infarction. The terminal R wave in the right ventricular depolarization was delayed. In reference to the previous tracing I doubt that the patient had an old posterior infarction.

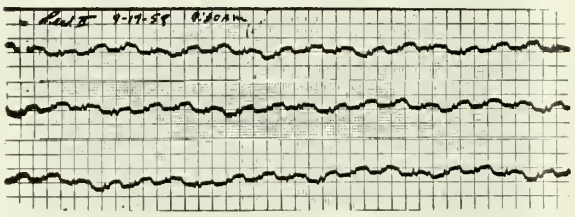

Figure 2. Electrocardiogram taken on day of death.

Dr. Delp: Thank you. May we have the x-rays now, please?

X-RAYS

Mr. Huerter: All of the x-rays were taken on the day of admission. The skull films show no evidence of increased intracranial pressure which would be manifested by lacunar markings in the flat bones of the skull. The posterior and anterior clinoids are well rounded. The sella turcica is normal in size, and the base is thick and normal. There is some calcification in the pineal gland. I interpret these as normal skull films.

The lateral film of the chest shows bony abnormalities manifested by lipping of the vertebral bodies which I believe is compatible with osteoarthritis.

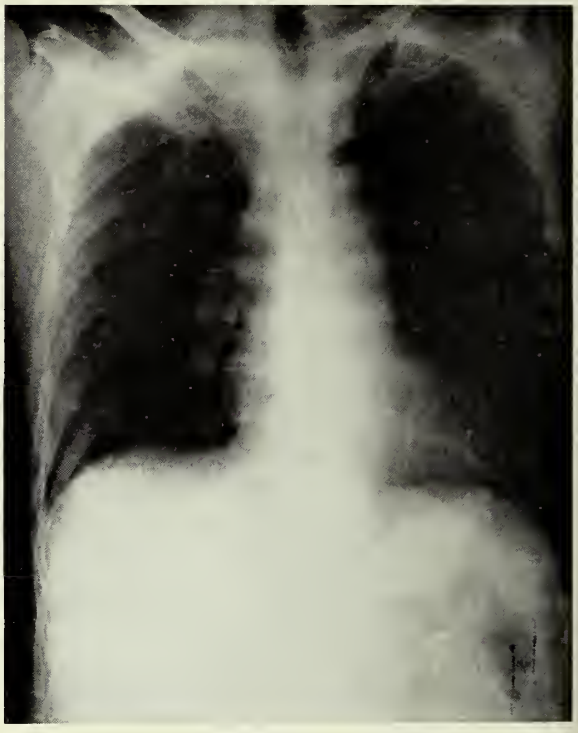

Figure 3. P-A of the chest.

No abnormalities are seen in the P-A of the chest *(Figure 3)*, and the angles are clear. There is some rotation of the film shown by the displacement of the costoclavicular or costosternal articulation. On the original film there was some haziness in the apex and a suggestion of a coin lesion. There is mild increase in prominence of the aorta, but I believe that the heart is normal in size.

A KUB film shows gas and fecal material throughout. No bony abnormalities are seen in the pelvis.

There is slight lipping in the vertebral bodies. Psoas shadows appear intact. I cannot visualize the kidney outline here, but in the original film the kidneys were moderately enlarged but within normal size. I interpret this as a normal KUB film.

Films of the cervical spine again show a hypertrophic lipping of the vertebral bodies.

Dr. Delp: Thank you. We will now have your differential diagnosis, Mr. Nelson.

Differential Diagnosis

Mr. Nelson: One day before admission this 49-year-old man awoke from an afternoon nap with right arm and right facial weakness and garbled speech. A few hours before he had had an episode of upper abdominal pain, nausea and vomiting which he treated with an enema and rest. Six months before admission he had had chest and arm pain and paresthesias of the thorax so severe as to interfere with his sleep. Ten days before admission he had abdominal and back pain associated with urgency, and he was given an injection. At that time a urinalysis and spine films were negative. On admission the patient appeared to be a well nourished man in no acute distress and with normal blood pressure. There was a grade II arteriosclerotic retinopathy and a grade II systolic murmur. His speech was garbled, and he had a right hemiparesis. A white blood count was 16,000. A sedimentation rate was 22 mm. per hour. His hospital course was characterized by variable symptoms, and his response to medication was poor. Rehabilitation therapy was started, but on his 27th hospital day he complained of chest pain, left shoulder and leg pain, and he was confused and acutely ill. On the 29th day he developed shock, and, in spite of medication, he died.

My diagnosis is based on the causes of hemiparesis preceded by chest, arm, and abdominal pain resulting in terminal cardiac failure. Polyarteritis nodosa could explain the multiplicity of these findings, but I discard that diagnosis because there was no anemia, eosinophilia, hypertension, kidney failure or dermatological findings.

Neoplasms of the brain may have an abrupt onset due to hemorrhage into the tumor and a slowly progressive course. That is an unlikely diagnosis, however, because there is no evidence of increased intracranial pressure or associated signs or symptoms, and there was no evidence of a primary tumor.

Dissecting aneurysms often produce such a clinical picture because small placques dislodge and manifest themselves as peripheral emboli. This is an unlikely primary diagnosis, however, because of the long course and because the x-rays showed no characteristic findings compatible with that diagnosis.

Multiple sclerosis and the demyelinating diseases could explain this variety of symptoms. These diseases are usually characterized by exacerbation, remission and transient neurological symptoms, but they are unlikely here because of the patient's history and because there was no Charcot's triad.

Patients with calcific aortic stenosis frequently remain asymptomatic until maturity when they develop dizziness, dyspnea, angina, and occasionally hemiparesis. I shall rule this diagnosis out because there were no typical physical findings or history of dyspnea or syncope.

Peripheral vascular disease is statistically important because 95 per cent of deaths attributed to it can be categorized either as intracerebral hemorrhage, thrombosis, emboli, or subarachnoid hemorrhage such as ruptured aneurysm or vascular malformation. Intracerebral hemorrhage appears in the majority of hypertensive patients with a sudden onset associated with headache, elevated blood pressure, neurological deficit, and bloody spinal fluid. These symptoms, however, were not present in our patient. Angiomata on the chest could be associated with cerebral angiomata, but the spinal fluid and history of the patient is not compatible with that. Cerebral thrombosis is usually preceded by transitory neurological defects which have developed for several hours, and frequently occurs during periods of lowered blood pressure. During his sleep the patient may have had a stroke which was preceded by pain. An infarction cannot be ruled out because he had the typical neurological deficit.

Emboli may occur suddenly at any time, and the clinical picture usually develops within minutes. The exact cause of an embolus occurring during sleep is unknown. The spinal fluid is clear with normal pressure and few cells. No region of the brain is immune to that type of insult. The middle cerebral artery is most frequently involved, and emboli to that region could explain the apoplectic event and the patient's neurological problems. Emboli commonly arise from a fibrillating heart caused by arteriosclerotic heart disease or rheumatic fever. The onset of thoracic pain extending into the right arm could have been related to the shoulder-hand syndrome that results in about 20 per cent of non-fatal infarctions. Hemiparesis may have been the result of a cerebral embolus from an infected mural thrombus secondary to myocardial infarction, but there is no evidence to support that diagnosis.

Other common sources of emboli are severe mitral stenosis, intracardiac surgery, non-bacterial endocarditis, paradoxical emboli, and subacute bacterial endocarditis which produces a picture of general infection and the gradual development of malaise and anorexia. Early attacks are often confused with "flu" or other common disorders, and the first symptoms

may be hemiparesis and showers of emboli. The protean symptoms result from embolization of various organs, and are diagnosed in almost every type of specialty clinic. Our patient had a heart murmur of which the etiology may have been rheumatic fever. He had leukocytosis, a moderately elevated sedimentation rate, and sudden sharp pain in multiple areas which could have been attributed to bacterial emboli. On the other hand, some of the classic signs of subacute bacterial endocarditis such as anemia, fever or petechiae, were present. Before 1952 the most frequently missed diagnosis was subacute bacterial endocarditis. One series reported that death resulted from heart failure caused by nodular deformity, acute myocarditis or coronary embolism in 55 per cent of the cases, and vascular catastrophe accounted for 17 per cent of the deaths in that same series.

In summary, I believe that our patient had subacute bacterial endocarditis, possibly following a damaged valve, and dislodged emboli which produced pain and paresthesias for six months before death. An embolus to the middle cerebral artery probably produced hemiparesis, garbled speech and facial weakness. Two days before death he had an acute myocardial infarction either from coronary embolus or from arteriosclerotic heart disease producing hypotension and gallop rhythm. He died of cardiac irregularities.

Clinical Discussion

Dr. Delp: Thank you, Mr. Nelson. What is your diagnosis, Mr. Voss?

Mr. Voss: Arteriosclerotic heart disease and myocardial infarction resulting from angina. He had an infarction ten days before, and at that time a mural thrombus developed which resulted in the hemiparesis.

Dr. Delp: Mr. Hunninghake?

Mr. Hunninghake: I believe that all of his pains were caused by small emboli rather than angina.

Dr. Delp: Mr. Odegard?

Mr. Odegard: I believe he had arteriosclerotic heart disease, and on the day before admission he probably had a myocardial infarction with lowered blood pressure and thrombosis.

Dr. Delp: Mr. Perry?

Mr. Perry: Arteriosclerotic heart disease with an infarct before admission.

Dr. Delp: How do you explain his discomfort and paresthesias in the thorax and extremities?

Mr. Perry: A severe myocardial insufficiency with an infarct could result in hyperesthesia; however, after seeing the x-rays I believe it was probably caused by osteoarthritis.

Dr. Delp: Do you believe cervical osteoarthritis was the cause of his symptoms?

Mr. Perry: Yes, I do.

Dr. Delp: Mr. Harris?

Mr. Harris: A previous myocardial infarction with mural thrombus and embolic phenomenon could explain the hemiparesis.

Dr. Delp: Mr. Huerter?

Mr. Huerter: The osteoarthritis would probably account for the pain in his arms and hands. The paresthesias of the chest may have been associated with severe coronary artery disease which is not an uncommon finding in an atypical form of angina.

Dr. Delp: Do you have a second diagnosis, Mr. Nelson?

Mr. Nelson: My second diagnosis is arteriosclerotic heart disease. There is no evidence of a previous infarction, and it can not be ruled out.

Dr. Delp: Mr. Hunninghake, why was the patient afebrile?

Mr. Hunninghake: Fever is usually present, but some authors report that ten per cent of patients with the chronic syndrome have no fever.

Dr. Delp: Mr. Huerter?

Mr. Huerter: I do not believe that these facts can rule out endocarditis. There have been reports of patients who did not have the classical signs and symptoms. Cases which had been prolonged for over six months usually presented those manifestations.

Dr. Delp: If embolization was the cause of his important signs and symptoms, why was there no evidence of peripheral embolism?

Mr. Huerter: I am not absolutely certain that there were no signs of peripheral embolization.

Dr. Delp: Are you implying that they may not have been observed?

Mr. Huerter: No; there may have been mesenteric emboli. The pain he had behind his left ear may have been caused by a peripheral embolus.

Dr. Delp: Mr. Hunninghake?

Mr. Hunninghake: His various pains may have been caused by small peripheral emboli.

Dr. Delp: Do you mean the pain in his fingers, hands and legs?

Mr. Hunninghake: Yes; they must have been quite small, and, consequently, favor a diagnosis of subacute bacterial endocarditis. Emboli that break off from a mural thrombus tend to be somewhat larger.

Dr. Delp: Would you be disturbed about the patient's negative blood culture?

Mr. Hunninghake: That does not necessarily rule out subacute bacterial endocarditis; blood cultures are, however, positive in a large number of cases.

Dr. Delp: Dr. Steegmann, what was your interpretation of his pains when you first saw him?

Dr. A. T. Steegmann (neurologist): The patient had a lingual apraxia, not garbled speech, and he was unable to describe his pain. The history stated that he had had severe pain in the middle of his back. If the patient had had only aphasia and hemiparesis

they could be explained on the basis of an insufficiency of the internal carotid on the left, a diagnosis that caused considerable debate. There is still no explanation, however, for his pain unless it is assumed to be of thalamic origin. It would be difficult to explain the thalamic lesion and the lesion in the distribution of the left middle cerebral artery unless it is assumed to be embolic in origin. The patient could not be examined adequately to determine whether this was a thalamic type of pain. It was my opinion that it might have been an embolic process.

Dr. Delp: Thank you. Dr. Williamson, the possibility of a brain tumor was dismissed rather promptly here in the differential diagnosis. The students have also minimized the possibility of the patient's having radicular pain associated with his osteoarthritis. Do you have any comments about that?

Dr. William P. Williamson (neurosurgeon): I believe we are justified in ruling out a brain tumor. The patient had an apoplectic onset of his neurological deficit late in the course of his disease. There was a midline pineal, and there were no previous pressure signs. Not enough was known about his pain to rule out a cervical osteoarthritis. The history states that he had arm pain on raising his arm over his head. If the pain were radicular it would have been discrete and much more likely to be brought on by movement of the head and neck rather than the arms. Pain on raising the arms over the head actually suggests a cervical rib, scalenus anticus syndrome or, perhaps, vascular pain with a hyperabduction syndrome. There were no objective signs of radicular involvement. I believe that he had vascular pain in the right arm rather than radicular pain since it was induced by raising the arm over the head.

Dr. Delp: Thank you. May we have your comments, Dr. Crockett?

Dr. Crockett: It is conceivable that the patient may have had an aortic dissection which sealed off to produce back pain and with no further progression for a period of time. That would not, however, be the usual course. When I saw the patient for the second time he had had an acute vascular collapse, and at that time there was evidence of an acute infarction which had not been present previously. I believe that there was evidence of multiple embolic phenomenon, and that the left side of the heart was the most likely source. Many questions have been raised pointing out that his course was certainly not typical of subacute bacterial endocarditis. Possibly the next best diagnosis would be a non-bacterial thrombotic endocarditis of which an occasional case has been reported in the literature. These cases have been concerned with patients with terminal illnesses such as carcinomatosis, but they may occur in individuals who have no accompanying disease. Our patient's course was certainly not typical of subacute bacterial endocarditis. He may have had a coronary artery embolus to account for the myocardial infarction.

Dr. Delp: Thank you. We will now have the pathologist's report.

Pathological Report

Dr. Peter Rasmussen (pathologist): At autopsy the patient was thin, weighing about 140 pounds. The original gross pathologic processes appeared to have arisen in the lungs, heart and vascular tree. This latter involvement resulted in multiple organ involvement and death.

In the apex of the upper lobe of the right lung was a grayish-white, 2x2x3 cm., roughly ellipsoid, firm tumor mass. Careful dissection of the hilar areas showed one lymph node with similar tumor tissue. This presumably represented a primary anaplastic carcinoma arising in the apex of the right lung. On histologic section it resembled somewhat an "oat cell" carcinoma *(Figure 4)*. Vascular invasion undoubtedly occurred, since tumor cells were also found in an occasional renal glomerulus.

The heart weighed approximately 390 gm. On the aortic and mitral valves there were large, irregular, friable, easily dislodged vegetations *(Figure 5)*. In the anterior descending branch of the left coronary artery a recent thrombotic occlusion was seen. In

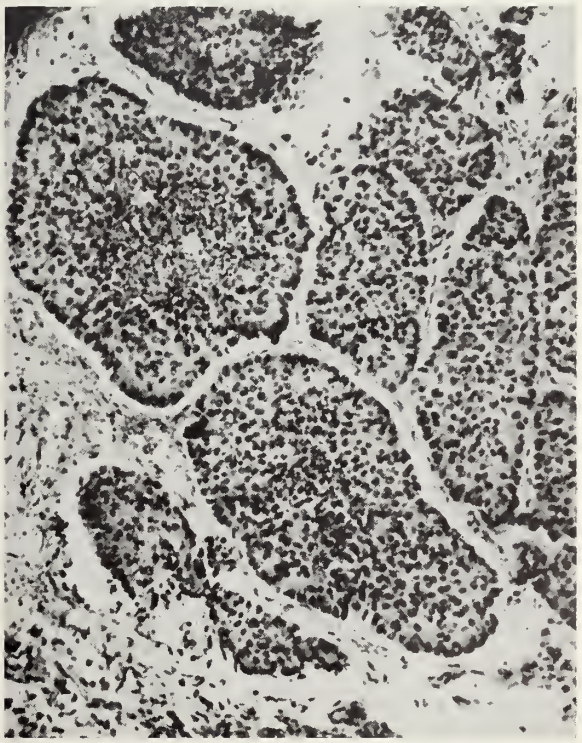

Figure 4. Photomicrograph of the anaplastic carcinoma of the lung. Note the lack of differentiation as well as the necrosis in the center of tumor nests. H and E × 165.

addition, there was a recent myocardial infarct in the anterior septum of the heart and extending along the anterior part of the left ventricle. Overlying this infarct was a recent mural thrombus. There was no evidence of old rheumatic disease.

Coronal sections of the brain showed extensive areas of recent necrosis involving the centrum semiovale as well as the superior margin of the temporal lobe and part of the internal capsule on the left side. An older area of infarction was present in the right side of the cerebellum. Perfusion of the internal carotid arteries was effected, but no occlusion to the flow rate was found. Numerous old and recent pulmonary emboli were present, as well as a recent pulmonary infarct in the lower lobe of the right lung.

Microscopically, the heart valve lesions were composed of fibrin with a few areas where neutrophils were incorporated. In general, however, the vegetations were acellular. Cultures of the lesions, as well as smears and bacterial stains of sectioned material, failed to disclose bacteria.

Further microscopic study of other organs indicated the presence of numerous areas of vascular occlusion of varying ages. Those in small arteries of the brain were recent with only small evidences of organization. The cerebral infarct, however, appeared to be of a week or more duration with gitter cells in the infarcted areas as well as focal demyelinization. Small arteries in the kidneys, adrenals, pancreas, and heart were occluded by thrombotic material which was also of varying ages. Hyalin-like thrombi were also found occluding afferent arterioles in the kidneys. Some small arteries, especially in the heart, had eccentric focal subendothelial nodular bulging of the wall into the lumen *(Figure 6)*. Endothelial cells were prominent in these lesions. Corresponding to some occlusions all organs were recent and older infarcts. The substance of the coronary occlusion seen grossly closely resembled the thrombi present on the aortic and mitral valves. Microscopic examination of the large myocardial infarct indicated coagulation necrosis and extensive infiltration with neutrophils.

The question now presents as to the nature of the disease process seen here. Did the patient have two diseases, an occult carcinoma of the lung with some type of idiopathic non-bacterial verrucous endocardio-

Figure 5. A gross photograph of the mitral valve showing the non-bacterial verrucous endocardiosis. The histologic appearance of these vegetations was the same as that of the thrombotic material occluding the left coronary artery indicating that the latter was an embolus probably arising from the lesions on the heart valves.

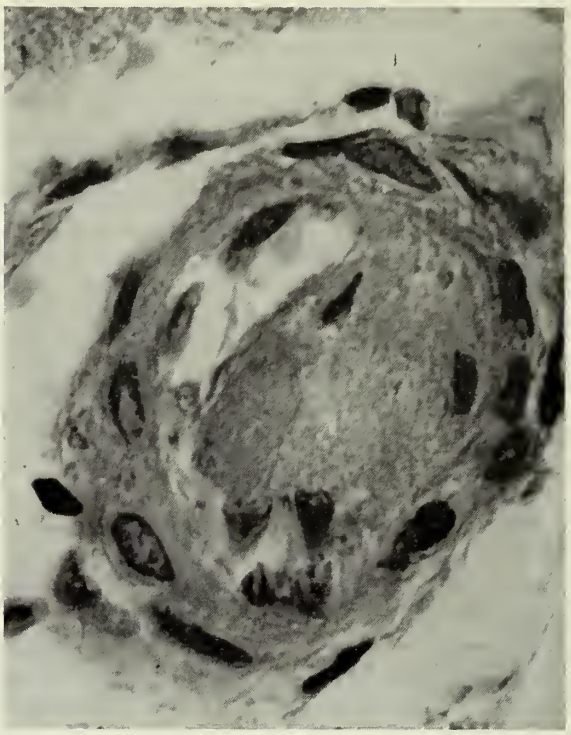

Figure 6. Photomicrograph of an arteriole in the brain. Note that the endothelium has been elevated eccentrically by a subendothelial, finely granular material. This arteriolar lesion closely resembles that seen in thrombotic thrombocytopenic purpura, indicating that the massive intravascular coagulation syndrome here presented is perhaps also on the basis of an allergic mechanism. H and E × 1500.

sis; or were these two processes of neoplasia and thrombosis in fact related? One cannot scientifically prove either point, but there have been reported in the literature a number of cases of carcinomas which have been accompanied by what has been called massive intravascular thrombosis, including the presence of non-bacterial verrucous endocardiosis.[2-5] One case of lung cancer has been reported with the presence of accompanying cryofibrinogens which were demonstrated using the patient's plasma which was placed in the cold. The cryofibrinogens were precipitated in a manner similar to cryoglobulins. Because the patient's *serum* did not precipitate in the cold, the authors assumed the plasma precipitate to be an altered fibrinogen: cryofibrinogen. Fisher reported a carcinoma of the stomach and a carcinoma of the lung with extensive intravascular thrombosis. In both of these cases the amount of cancer was larger than that which is seen here. He stated that the pathogenesis of these vascular lesions represented an immunoallergic manifestation in which there was focal vascular damage due to allergic mechanisms with the deposition of fibrinoid material. He also indicated that vascular occlusions in larger arteries were probably embolic, originating from non-bacterial verrucous endocardiosis. McKay presented similar arguments in his cases of carcinoma of the pancreas with metastases to the liver and carcinoma of the cervix with metastases to the liver and pelvic lymph nodes.

Fisher maintained that the staining reactions of the non-bacterial verrucous endocardiosis, as well as the various vascular lesions, was not that of fibrin, but was fibrinoid. In more recent literature,[6] it has been shown that some fibrinoid is really nothing more than physically altered fibrin. Moreover, it often stains with fluorescent-labeled antibodies which have been produced against fibrin. The type of arteriolar occlusive lesions found here are also seen in the entity known as thrombotic thrombocytopenic purpura; and these also have been shown by Gitlin and others to be altered forms of fibrin, using the fluorescent antibody labelling technique.

In summary, the preponderance of evidence in this case points to an evolution of extensive intravascular thrombosis secondary to a small pulmonary carcinoma. Undoubtedly many of the vascular occlusions that were present also represented embolic phenomena from heart valve vegetations, as well as emboli to the lungs from leg and pelvic veins.

While many of the clinical manifestations here, including the terminal cause of death, are easily attributable to vascular occlusions, many of the vague, painful, thoracic and upper extremity complaints which the patient exhibited remain specifically unexplainable. Presumably they may have been caused by intermittent pulmonary emboli or periodic obstruction to small arteries supplying peripheral nerves.

Dr. Delp: In retrospect there were clinically two outstanding features of this case. First, the patient certainly had a central nervous system lesion at the time he was admitted. Second, it seemed logical that this was a vascular lesion and fairly reasonable that embolization would have been suspected. We note, finally, that the patient died with myocardial infarction. It becomes tempting to try to build the final picture on arteriosclerotic heart disease existing for a long period of time with embolization as secondary to this. Unfortunately we are not able to establish this clinically. We will have to accept the pathologist's report because we were not much concerned about the heart at the time the patient was admitted or just before his admission. He did not have an electrocardiogram before his admission, and no tracing was made early in his hospital stay. That leaves a weak point in the final story. This is the second similar case that we have presented here in two years, and it is an entity that disturbs me. I see absolutely no way that we could have recognized the presence of this carcinoma, and its relationship is greatly intriguing.

Pathological Anatomical Diagnosis

Anaplastic carcinoma of the upper lobe of the right lung, with metastases to the kidney.

Non-bacterial verrucous endocardiosis involving the mitral and aortic valves.

Multiple fibrin emboli within small and medium-sized arteries of the kidney, liver, spleen, pancreas, adrenal gland, and brain; fibrin embolus occluding the anterior descending branch of the left coronary artery.

Acute transmural infarct involving the anterior wall of the left ventricle and the anterior portion of the interventricular septum.

Multiple partially organized thrombotic emboli in the major branches of the pulmonary artery, bilateral.

Recent infarct of the lower lobe of the right lung.

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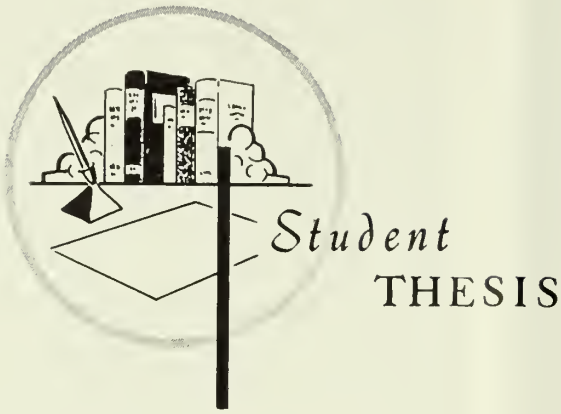

Familial Polyposis of the Colon

WILBUR JANZEN, M.D., ***Fresno***

FAMILIAL POLYPOSIS OF THE colon is a distinct disease characterized by the occurrence of numerous adenomatous polyps in the mucosa throughout the large intestine. These polyps generally appear during the first or second decades of life though McKenney observed the disease in a two-year-old baby. The condition is inherited as a Mendelian dominant characteristic, is transmitted through and affects both sexes. Symptomatically the condition is difficult to differentiate from other large bowel abnormalities. Loose stools and rectal bleeding are the most commonly encountered symptoms. The primary concern of this disease lies in its tendency to malignant changes and death from carcinoma of the colon or rectum at an early age.

It is the purpose of this paper to review the literature and discuss the disease in its entirety. The discussion shall be divided categorically into: 1) Historical review, 2) Hereditary basis, 3) Malignant tendencies, 4) Symptoms and diagnostic findings, 5) Current views on treatment, and 6) Presentation of three cases and their common family pedigree.

History

It appears that Menzel, in 1721, was the first to describe a case of diffuse polposis of the colon. This would date the disease back more than two centuries. Luschka, in 1861, reported a colon in a woman, age 30, as having contained thousands of polyps. Virchow is credited with having given the first accurate pathologic description of this disease in 1863. It remained for Harrison Cripps, some 20 years later, in 1882, to observe the disease in a brother and sister. This was the earliest indication that the entity was of a hereditary and familial nature. The true genetic relationships were not known until the 1930's when Dukes, McKenney, and others presented their studies. Further studies by Guptil, Strohl and Pontius, and Dukes, have firmly established the fact that the tendency for the development of disseminated polyposis of the colon is inherited as a simple dominant trait. The death of a 30-year-old woman from carcinoma of the colon shown to have developed from pre-existing polyposis, was first described by Handford in 1890. The first successful sub-total colectomy and ileo-sigmoidostomy was carried out in three stages by Lilienthal in 1900. This was the first surgical treatment for polyposis. Three hundred eleven cases were reviewed by Schaffer in 1952 to further establish the familial and malignant tendencies of this disease involving the colon and rectum.

Heredity

Much work has been done in an attempt to trace the origin of the hereditary defect responsible for this disease. Polyposis apparently begins by a change of mutation in the genes of some individual who himself is not afflicted, but passes it to his descendants. Familial polyposis of the colon is inherited as a Mendelian dominant or occasionally as a recessive char-

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This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be best by the faculty at the school. Dr. Wilbur Janzen is now serving internship at the Fresno County General Hospital, Fresno, California.

acteristic. In being inherited as a heterozygous, dominant, Mendelian characteristic, only an affected parent can transmit the disease, and then only to half the children. In other words, 50 per cent of the offspring from the mating of a heterozygous person carrying the dominant gene and a normal (homozygous recessive) individual will in theory have the disease. If the gene is dominant the disease will be found in every generation, but if the gene is recessive, the disease will occur only when both parents carry the mutated genes.

The hereditary transmission of the mutated gene shows no predilection for either sex. Reed and Neel in their studies on the genetic nature of familial polyposis of the colon have estimated the minimum frequency at birth of individuals with the gene for polyposis as 1.21 to 0.45×10^{-4} or one in 8,300 births.

Polyposis Is Not Congenital

The evidence therefore is fairly conclusive that polyposis is inherited but is not considered congenital, that is, the polyps are not present at birth. This is as opposed to similarly inherited diseases such as hemophilia. The polyps generally have been found to develop at or about puberty, or later in life. Jacques and Le Fevre, however, have demonstrated the disease in a four-month-old infant. Others have reported examining patients in their late thirties, or older, and finding the colon normal. On repeat examinations several years later these same cases were found to have typical signs of polyposis. Reasonably one might conclude, or at least assume, that there may be some difference in the mutant genes favoring the development of polyposis at different ages, but that generally the disease makes its preview at the time of puberty. This may partially explain the cases known to have polyposis in childhood as well as those past middle age. The average age of patients showing signs of familial polyposis is between 20 and 30 years, but, as mentioned, is occasionally seen beyond these age limits.

Studying the genetics of this disease may involve many difficulties, a few of which perhaps are worth mentioning. For example, one or two generations ago and even occasionally today, when a member of a family died of cancer it was not a freely discussed matter. The early death of affected persons tends to result in a scattering of the family. Then too, affected persons often are quite young when their parents die of the disease, and therefore their knowledge of the family often is quite incomplete and inaccurate. These facts are responsible for many gaps in the histories obtained from various members of the family. The place and date of death so frequently is unknown and unobtainable by correspondence.

Inasmuch as this is not a common disease, only a small number of cases can be observed by any physician in his lifetime.

For approximately 50 years Utah sanctioned polygamous marriage via its unusual religious background. This has provided unique families of great size as investigative material. Most fortunately, excellent genealogical records are obtainable from this source.

Malignancy

An occasional patient with polyposis will meet death secondary to hemorrhage. Others may die from intussusception, still others from perforation and sepsis, etc. By far the most significant cause of death, however, is adenocarcinoma of the colon and rectum, and so constitutes the most dangerous complication of this disease.

Concerning polyps of the colon in the broadest sense, Swinton and Doane report that by microscopic evidence of autopsied material, 14 per cent of all carcinomas of the colon arise from benign polyps. Buie, in contrast, reports that only 4.6 per cent of patients with solitary polyps of the rectum subsequently developed carcinoma. Morton feels that the greatest part of the polypoid lesions of the colon and rectum will become malignant if allowed to remain "in situ." One can conclude that a polyp should be considered a true tumor and must be considered pre-cancerous.

As concerns the familial polyposis specifically dealt with in this paper, most authors are of agreed opinion that the polyps in their course of development become carcinoma in a high proportion of cases.

Taking the malignant potential as pointed out above for solitary polyps and multiplying this times the thousands of polyps present in familial polyposis can only lead one reasonably to the early conclusion that this disease is the most dangerous precursor of carcinoma known to medical practice today.

The exact statistical analysis, percentage-wise, as to how many patients with familial polyposis and without treatment develop carcinoma is not completely known. The reason for this is that the period of observation of these patients frequently is too short and the cases too few to acquire an accurate estimate. Many are of the opinion that 100 per cent of all patients with familial polyposis will, if untreated, ultimately develop cancer.

Doering reports that of 50 cases of polyposis studied, 36 were followed long enough to determine the cause of death. Of these only 21 died of cancer. Hullsiek found that of 127 patients only 36 per cent developed carcinoma. Dr. Cuthbert Dukes has followed the course of this disease at St. Mark's Hospital for many years, and has reviewed 156 cases and shown quite convincingly that malignancy develops in one or more polyps with grim punctuality, 10 to 15 years after the first symptoms of polyposis. He feels

the expected life of an affected person is only 41.6 years. The incidence, therefore, may or may not always be 100 per cent, but significant enough to warrant definitive treatment in all cases. It would appear from the literature that the rate of growth and the tendency to undergo malignant change vary from family to family, but that in general the earlier the disease occurs, the more rapid its course, while after middle age the polyps develop more slowly. It is a common finding in the literature on this disease to note that most of the living patients with familial polyposis who have not been treated are under the age of 30 years. Most of those over 30 either die or are proven cases of carcinoma.

Duration of Symptoms Average Three to Four Years

It has been pointed out by Schaffer that the average duration of symptoms as known in 28 cases was three to four years. Exact age data were kept on 80 of his cases. The average age was 28.9 years with deviations to the extreme of two years and 61 years. He reports that the patients with familial polyposis who were alive and without malignancy were all under 30 years with one exception, and states that the critical period is from 20 years on, with a presumed turning point to malignancy at about 25 years of age.

Neel, Bolt, and Pollard feel that because of the wide variation in the age at which malignant degeneration first appears, any person with polyposis above the age of 25 years is clearly within the danger zone and that 12.5 per cent of their series of patients actually developed malignancy below that age. This automatically leads one to conclude that the closer our patient with familial polyposis becomes to the age of 30 before any treatment is instigated, the greater are his chances of developing carcinoma, and hence the smaller are his chances for a cure.

A Benign Disease

In summary then, familial polyposis of the colon technically is originally a benign disease. In nearly all cases, however, Brasher reports that "a careful histological search throughout the colon and rectum will show areas of great epithelial hyperplasia, which although there is no invasion or gross irregularity of cell architecture, can be but a short step from frank carcinoma." These proliferating cells of the mucosa are therefore precancerous and the finding of adenocarcinoma of the colon and rectum is so common that polyposis should always be clinically considered as a malignant disease and be treated accordingly.

Symptoms and Diagnosis

Many and varied symptoms and signs have been described in patients with familial polyposis of the colon. There appears to be no single symptom or symptom-complex however, which can be considered pathognomonic of the disease, especially in its early and operable stages. Most commonly the patients give a long history of recurrent episodes of abdominal discomfort associated with cramps and bloody diarrhea. Some only complain of periodic griping lower abdominal pain with mucous and blood-streaked stools. The diarrhea has been stated to be the earliest symptom of the disease and at the onset may be slight, amounting to little more than a soft consistency of the feces. This symptom progresses so insidiously that the patient considers it normal for him to have more frequent bowel movements than others. The diarrhea increases with time and interferes with the daily life of the patient. The patient takes greater note of the hemorrhage and mucous discharge from the polyps than the diarrhea experienced and these symptoms are not so easily disregarded. Unfortunately, too often this is a late manifestation of the disease process and the complications to be described later, namely the malignant change will have already taken its course.

Anemia and weight loss are frequently associated findings and generalized weakness is another common complaint. Intestinal obstruction, partial or complete, occurs occasionally from enlargement of the polyps or the development of obstructing carcinoma. There appear to actually be few cases who do not have some of these mentioned signs and symptoms if they are known to have familial polyposis of the colon.

In 63 patients with familial polyposis treated at the University of Michigan, Floth, Odell, and Collen report that 82 per cent had symptoms referable to the large bowel at the time the diagnosis of polyposis was established. The symptoms had a duration ranging from a few months to 22 years. The most common symptoms in this series were diarrhea or loose bowel movements, abdominal cramps, and blood in the stools.

Needless to say the symptoms of familial polyposis vary in different patients. Some have only mild symptoms, whereas others have the severe bloody diarrhea, malnutrition, abdominal pain and tenesmus as mentioned. Occasionally the first indications of the disease arises from a carcinoma superimposed upon the polyposis. It is in these cases that pain and distention from colonic obstruction are seen.

The physical findings are generally within normal limits in affected individuals. The only suggestive sign is discovered on digital examination of the rectum. However, the growths may be so small or so few in number as to be undetectable digitally making sigmoidoscopy and air contrast studies a "must" to visualize the numerous polyps of various size.

Abnormal Pigmentation of Lips Seen

It should be mentioned at this point that many articles have reviewed in extensive detail the syndrome of disseminated polyposis of the gastro-intestinal tract accompanied by abnormal pigmentation of the lips and buccal mucosa and, more rarely, of the skin about the mouth and fingers and toes. Familial polyposis of the colon should therefore be clearly differentiated from the *congenital* polyposis affecting the *whole* gastro-intestinal tract, which is frequently accompanied by skin manifestations. Peutz is credited with having described the syndrome of melanosis of the oral mucous membranes with polyposis of the intestine, while Jeghers and associates observed melanosis of both the oral mucosa and digits in association with the same intestinal polyposis—again *not* familial polyposis of the colon. This entity therefore will not be further pursued as concerns this paper. A finding recently described by Oldfield is that of multiple sebaceous cysts in combination with colonic polyposis. Soft and hard tissue tumors have been described as definitely associated with familial polyposis of the colon by Le Berge, Sauer, and Mayo. They feel that when such are found on physical examination, a patient should have proctoscopy and roentgen exam of the colon to rule out familial polyposis. Further research appears necessary to accurately evaluate the significance of these new findings.

Diagnosis has already been casually mentioned. More specifically however, it must be said that digital examination should be followed by rectosigmoidoscopic examination. On visualization of the lesions a biopsy may be obtained from suspicious areas and histologically examined. Roentgenologic examination of the colon is of equal diagnostic importance. Using the modification of the double-contrast method as described by Weber, demonstration of the polypoid lesions can be clearly carried out. These two procedures can establish the diagnosis with nearly 100 per cent accuracy.

In summary then, this disease first requires a suspicion of its presence. A history and physical examination is of importance followed by sigmoidoscopy, hematocrit, and stool guaiac tests. Barium enema with air contrast studies are then to be offered to all patients positive for polyps on sigmoidoscopy.

Treatment

When malignancy has been established in a case of intestinal polyposis, early and radical treatment must be carried out. In cases of advanced polyposis without clinical carcinoma treatment cannot be delayed. It is the early case most often found when screening an affected family, that raises the problem of not only what treatment to advise, but when it should be carried out. Schaffer hopefully states that the ideal time of treatment is before the symptoms have started, which is a rare opportunity unless screening measures are taken in members of affected families. He feels that all patients with familial polyposis should be examined as soon as the condition is diagnosed in a parent. Today it appears that the best treatment for prevention of the inevitable malignant changes in the polyps is surgical excision of all of the affected large bowel.

It is indeed a drastic measure to remove the entire colon and rectum in a young and healthy-appearing individual, leaving him with a permanent ileostomy. This is especially so when none of the lesions are malignant by all criteria of present day determination.

Therefore it has become a reasonable practice by many surgeons to anastomose the terminal ileum to the rectum or sigmoid after colectomy, having cleared the rectum and lower sigmoid of any polyps by fulguration through a sigmoidoscope. It has been found that removal of the polyps before colectomy is more feasible than after same because of the interference of the ileal contents with good visualization of the rectal mucosa after anastomosis. This anastomosis between the ileum and rectum must be low enough to be within reach of a sigmoidoscope. Another advantage of the ileo-sigmoidal and high ileo-rectal anastomosis is that it is easier to perform and bowel function is less impaired post-operatively. The disadvantages are the large area of remaining mucosa from which new tumors may develop, as well as the greater difficulty in the fulguration process.

Following this treatment the patient must return regularly at least every six months for sigmoidoscopic examination and concurrent fulguration of any new polyps for the rest of the patient's life. Unfortunately many patients will, for a variety of reasons, fail to cooperate by not having these proper proctoscopic examinations.

An Advantage of Subtotal Colectomy

The advantages of subtotal colectomy with ileo-sigmoidostomy or ileo-proctostomy lies in the fact that with retention of sphincteric control, fewer stools are found per day and nutritional problems, are few as opposed to the situation in ileostomy. Not enough evidence has been published to prove that this step will prevent the development of rectal carcinoma, but the preservation of normal bowel function makes this procedure justifiable over a permanent ileostomy. Polumbo and Rugtiv conclude that many patients requiring colectomy can withstand a one-stage procedure with or without a preliminary ileostomy better than they could a multiple staged operation, which has frequently been the accepted surgical practice in this operation.

Polyps Are Often Numerous

In cases of more severe nature the polyps may be so numerous in the rectal area that complete fulguration leaves the mucosa so scarred or stenotic, that impaired function results. Two more radical procedures are then open for consideration. One is complete colectomy with peritoneal excision of the rectum leaving an abdominal ileostomy. Many patients will postpone this procedure until a malignancy develops and often then it is too late. Total recto-colectomy with an abdominal ileostomy has the advantage of removing all of the potentially malignant colonic tissue and is easier to perform from a surgical standpoint. The disadvantages of a higher mortality rate, malnutrition, and the severe discomfort of living with an ileostomy make for a thoroughly unpleasant post-operative course in many patients. Although care is exercised many patients with an ileostomy have skin excoriation and stomal obstruction around their ileostomies to add to their difficulties.

Ravich and Sabiston have recently advocated the other alternative, that is of doing a complete colectomy followed by ileo-proctostomy. The procedure here is to remove the rectal wall, and thereupon anastomosing the ileum to the anal mucosa after pulling it through the muscular rectal tube. Carlson and Novacovich report against this procedure and say that in three patients on whom colectomy and anal ileostomy were performed, two had a difficult, prolonged post-operative course and still had involuntary stools at night 18 months after the procedure. The third patient later had an abdominal ileostomy as a second procedure because the anal-ileostomy was not compatible with the patient's existence. A fourth case also was reported a failure.

Goligher also reported two cases which led to bad results using the Ravitch operation. It would appear that a well controlled ileostomy may be superior to the uncontrolled diarrhea which may result if sphincter control is lost in this procedure. It is argued that if the anal-ileostomy is not successful all is not lost and a permanent ileostomy may still be done. The disadvantage to this, however, is that another major surgical procedure is necessary and more ileum is lost, frequently resulting in poorer nutritional balance and a poorly controlled ileostomy. Theoretically this is an advantageous operation and affords assurance that all the mucosa with malignant potential has been removed, but not enough evidence appears in print to fully establish whether this anal-ileostomy offers enough preservation of the sphincteric mechanism for a normal livelihood. Another procedure of possible promise has been described by Aylett, wherein the ileum is anastomosed to the distal rectum by a combined abdominal-peritoneal approach leaving about one centimeter of rectal mucosa intact. In his reported case, complete continence was maintained but further statistics on this procedure are not available at this time.

Although prophylactic colectomy may seem desirous in all cases of patients having the disease in its progressive state, there is still a definite mortality incurred in the performance of the operation.

An Advantage of Colectomy

An advantage of colectomy in youth is that the surgery is carried out when the patient is most physically fit and before a career has been started. Adults with careers tend to postpone treatment and tolerate prolonged observation poorly. Thereupon, the risk of malignant change, as has been mentioned earlier, increases with every year of adult life that the operation is postponed. The age incidence has already been discussed, but it can be mentioned again that this factor plus the severity and duration of the patient's symptoms, and the severity of the polyposis all help to reach some tentative age at which malignant change may be anticipated.

Other factors to be considered are that a barium enema will not show malignancy in the early stage and the malignancy in the colon may be far more advanced than determinable by sigmoidoscopic examination, *i.e.,* the mucosa seen may not be at all representative of the polyposis in the colon.

A few words should be said regarding the value of sterilization as a concomitant procedure at the time of colectomy. We have pointed out the Mendelian dominance and the malignant degeneration of this disease. It approaches the ultimate in preventive medicine and the full responsibility of every physician to recommend such sterilization measures in all affected individuals.

In conclusion regarding treatment of this disease, it may be said that the ideal treatment, from a malignancy standpoint, is colectomy including the rectum, with the establishment of a permanent ileostomy. Due to the disadvantages encountered, however, a less radical procedure may be considered in selected cases, consisting of a sub-total colectomy with ileo-rectosigmoidostomy preserving the bowel continuity. Consideration for this procedure should be given only when: 1) the polyps in the rectal area are few enough to be removed safely by fulguration before colectomy, 2) there is no carcinoma in the rectosigmoid or rectum, and 3) the patient can be considered cooperative and willing to return regularly for sigmoidoscopic examination and fulguration of any new polyps. The anastomosis should be low enough to see same and all the remaining rectum by sigmoidoscopy.

Case Report No. 1

Mrs. A. Z., a 24-year-old white housewife, was first seen in this hospital on March 5, 1956, giving a history of recurrent episodes of bloody stools and constipation of four years duration, especially more severe the last nine months. She was seen elsewhere several times at six month intervals and was told she had "hemorrhoids," accounting for her symptoms. Barium enema, done at another hospital prior to entrance here, revealed polyposis.

A large and extensive history of polyposis in this patient's family has been compiled and is included in this paper. The patient stated that prior to the discovery of the familial nature of this disease, "four or five of the maternal uncles and aunts would die each year of cancer of the colon." Further elaboration shall be deferred and included in the pedigree which follows.

The patient gave an additional complaint of a nontender mass in her left breast.

The past medical history was essentially irrelevant. The patient had had a subtotal right oophorectomy and appendectomy in 1950.

The physical examination was significant only in that a fibrosed "hematoma-like" mass was noted over the left tibia. Laboratory studies and x-rays were within normal limits. The hemoglobin was 13.7 grams. The barium enema films are presented in this paper and reveal the multiple small polyps of the colon. The cecum as well as the descending colon appear involved.

Sigmoidoscopy was done with visualization of many polyps up to 28 cms. in depth. All of the polyps were sessile except one, the most distal of them all. Generally many were described as looking like "tapioca seeds."

Hospital course: On March 8, 1956, under nitrous oxide, pentothal anectine anesthesia, and with local infiltration of the abdominal wall using Novocaine, a subtotal colectomy was done with preservation of only the rectum with an end-to-side ileo-proctostomy.

The patient was advised to have tubal ligation in view of the familial nature of the disease, but she decided against same at this time.

She tolerated the procedure quite well although for approximately eight days she had prominent diarrhea which slowly improved with the administration of paregoric, low residue diet, and a bit of "psychotherapy."

A gastrostomy was done for decompression eliminating use of a Levine tube. This was removed without complications on the eighth postoperative day and the patient was discharged on the 12th postoperative day. Arrangements were made for following the patient at frequent intervals for observation as to the possible recurrence of any polyps in the remaining rectal tissue.

The follow-up visits are here enumerated:

April 19, 1956: Patient is having 10 to 15 bowel-movements per day. Some peri-anal excoriation is noted and controlled with ointment. Sigmoidoscopy: Anastomosis seen at three to four inches. Six small rectal polyps two to three mm. in size were fulgurated.

May 14, 1956: Patient is having 10 to 12 bowel-movements per day. Diet includes everything except raw fruit. Weight: 110 pounds (three pounds less than preoperative weight). Sigmoidoscopy: To 12 inches. One polyp seen and fulgurated.

July 16, 1956: Patient is having seven bowel movements per day. No bleeding. Eats everything. Weight: 114 pounds (one pound over preoperative weight). Sigmoidoscopy: Negative.

January 17, 1957: Patient having five to seven bowel movements per day. Well formed stools. Eats everything. Taking calcium and vitamins which tends to reduce bowel movement frequency to four per day. No bleeding or rectal complaints. Sigmoidoscopy: Negative. Anastomosis seen at 12 to 15 cm.

October 23, 1957: Admitted for external and internal hemorrhoids. Patient is having bright red bleeding with bowel movements. Same surgically corrected. Sigmoidoscopy: Negative to 25 cm.

March 31, 1958: Stools well formed. Having complaints of right upper quadrant pain. Gallbladder visualization: Many cholesterol stones seen.

April 24, 1958: Cholecystectomy and transection of Fallopian tubes performed.

May 26, 1958: Asymptomatic. Gain of six pounds from preoperative weight. Eats everything. Sigmoidoscopy: Negative.

August 25, 1958: Asymptomatic. Sigmoidoscopy: Negative. To return in six months.

Case Report No. 2

Mrs. M. S., a 23-year-old white housewife was admitted to the University of Kansas Medical Center on November 8, 1952 with the chief complaint of rectal bleeding of six months duration and a tendency to anemia and weakness for several years. These symptoms previously had been attributed to hemorrhoids. Three weeks prior to admission, the patient had had a "check-up" by her local physician because her sister age 29 had surgery for an ovarian abscess and was found to have polyps of the colon with massive malignancy and widespread metastasis. The sister died about a year later.

The patient's past history and physical examination revealed only that she had always had heavy men-

strual flow for seven to eight days and that she appeared as a thin, nervous individual. The hemoglobin was 11.8 grams. All other laboratory studies were within normal limits.

Sigmoidoscopic examination and barium enema revealed many polyps ranging from one to 10 mm. in diameter. The larger polyps (six to 10 mm. size) were noted 13 to 15 cms. in depth and beyond while the smaller polyps were seen from zero to 12 cms. These were removed on November 14, 1952 by fulguration through the sigmoidoscope to 26 centimeters.

On November 24, 1952 a subtotal colectomy and ileo-proctostomy was done in a single stage operation. Her postoperative course was uneventful and she was discharged on the eleventh postoperative day. The pathologists reported the specimen as: Multiple polyposis of the colon with adenocarcinoma of the descending colon. Twenty lymph nodes were examined and were without evidence of carcinoma.

Follow-up visits:

March 18, 1953: Has had diarrhea on two to three occasions but well tolerated. Eating well and gained fifteen pounds since surgery. Occasional right upper quadrant sharp pain and diagnosed by local physician as gallbladder attacks. Sigmoidoscopy: Negative to 20 cms. depth.

July 29, 1953: Patient doing well. Instructed on high calorie, high protein diet. Sigmoidoscopy: Negative to 25 cms. depth.

February 16, 1954: Asymptomatic but "loose stools with eggs, whole milk, and fats." Weight stable. A hard, moveable, non-tender "lump" measuring three-fourths by two inches is noted approximately two inches to the left of patient's umbilicus. Sigmoidoscopy: Negative to 25 cms.

November 8, 1954: Pt. asymptomatic. Sigmoidoscopy: Negative to 25 cms. depth.

February 18, 1957: Has six bowel movements every day of normal consistency. No bleeding. Eats everything. Weight stable at 92 pounds (80½ pounds at surgery on November 24, 1952). A hard mass slightly to the left of the old operative incision and now about seven to eight cms. diameter is noted. Impression is that of metastatic carcinoma. Sigmoidoscopic examination and barium enema both negative. Patient is advised to remain in the hospital for excision of above described tumor and also undergo an exploratory laparotomy.

February 18, 1957: Second K.U.M.C. hospital admission. Same mass now described as egg shaped and egg sized and in the region of the left upper rectus muscle. It is easily movable, non-tender, and does not cause retraction in the skin. On February 20, 1957, under general endotracheal anesthesia, a wide excision of the mass and the attached abdominal wall structures was performed. At the same exploration, there was found to be no evidence of recurrent carcinoma, however there was a hard irregular nodular tumor at the lower end of the mesentery of the small bowel in the region of the previous ileo-proctostomy. This mass was found to involve the right ureter which was dilated. Biopsies taken of the mass in the mesentery revealed it to consist merely of fibroplasia and biopsy taken of the abdominal wall mass revealed a desmoid tumor. The right ureter was freed up from the fibrotic mass and the abdominal wall closed under tension and with considerable difficulty because of the large defect. The patient tolerated this procedure well but during the evening of the day of surgery, she developed signs of increasing blood loss and was again taken to the operating room where exploratory laparotomy revealed a hemoperitoneum of approximately 2500 cc. of blood. Control of bleeding was affected by ligature of several bleeding sites and the abdomen closed. The postoperative course following this second procedure was complicated by retention of tracheal secretions and tracheal suction and intercostal nerve blocks had to be resorted to. Following this, the patient developed an intermittent daily afternoon fever and was thought to have an intraabdominal abscess or urinary tract infection. With antibiotics this febrile reaction subsided and the patient was discharged on March 9, 1957.

Final diagnosis: Fibroma (desmoid) of left rectus abdominus. Fibroma of mesentery of small intestine. Thecoma of left ovary (benign). Intraperitoneal hemorrhage.

Operation: Abdominal exploration. Left oophorectomy. Right ureterolysis. Excision of desmoid tumor of left rectus muscle.

Second operation: Abdominal laparotomy with control of hemorrhage.

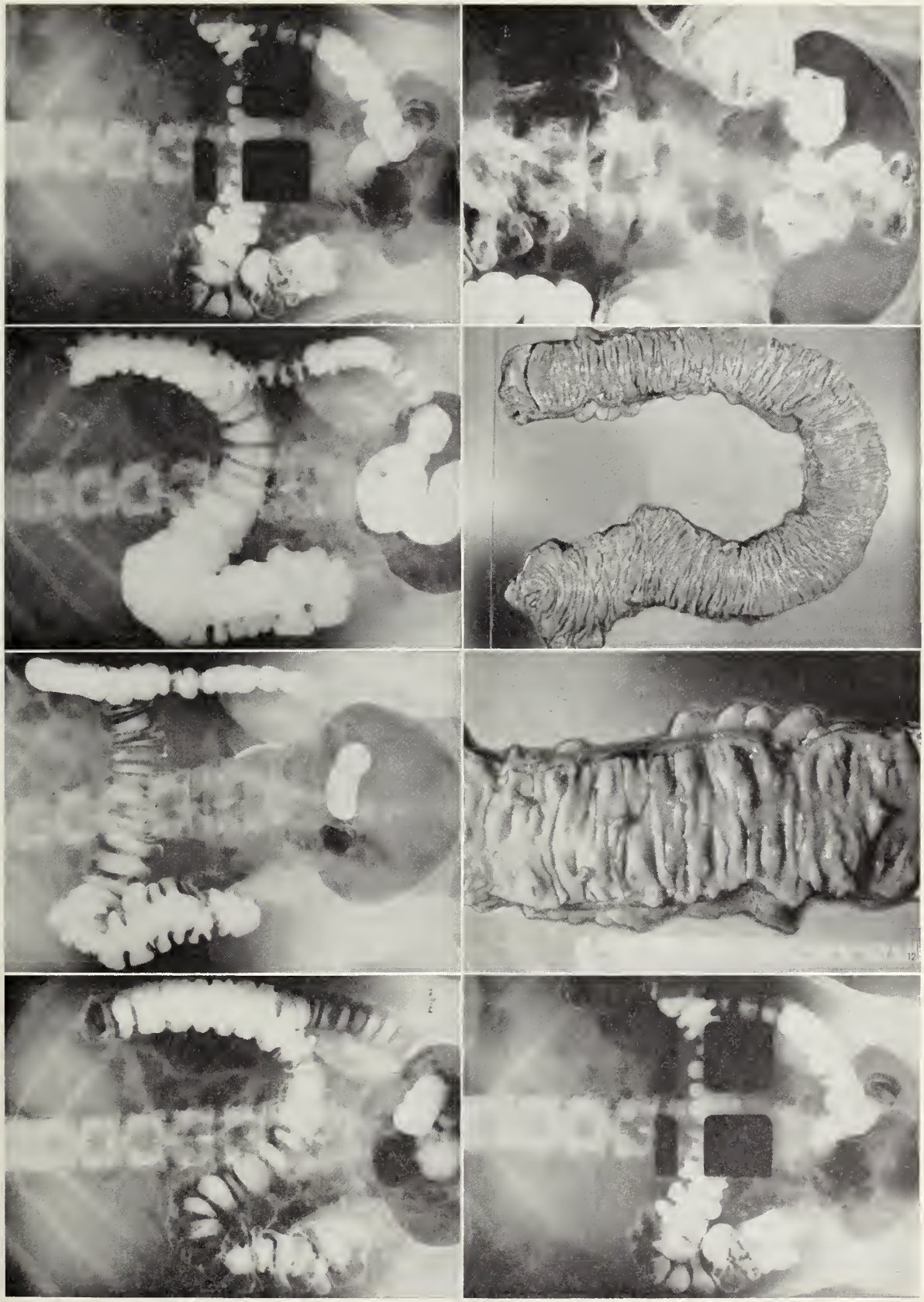
April 15, 1957: Having three to four bowel movements per day, which were well-formed, however. One episode of sharp right upper quadrant pain. Is gaining weight and is feeling well. Sigmoidoscopy: Negative.

November 22, 1957: Six tapioca-seed-like polyps removed by fulguration. Not malignant. No complaints.

August 4, 1958: Asymptomatic. Five, one to two mm. adenomatous polyps removed near anastomosis. Not malignant. To return in six months. Barium enema unsatisfactory. To be repeated.

Case Report No. 3

Mr. A. C. was a 22-year-old white man who entered this hospital as his first admission on May 17,



1956 complaining of occasional bright red blood in his stools for two years. No other gastrointestinal complaints.

Past history revealed that the patient had had an appendectomy in 1951.

Physical examination revealed a well-developed, well nourished white male. All findings normal. Laboratory studies were reported as normal. The patient had a hemoglobin of 16.5 grams. Sigmoidoscopic examination revealed multiple small tapioca-seed-like polyps in the rectosigmoid to 22 cms. in depth.

On May 19, 1956, under cyclopropane, ether, curare, anectine anesthesia, a subtotal colectomy was done with end-to-end ileo-sigmoidostomy. A gastrostomy was used for decompression. Postoperatively the patient did relatively well and was afebrile on the third postoperative day and was discharged on May 27, 1956 to be followed in the outpatient clinic.

Follow-up visits:

June 25, 1956: Did not keep appointment.

July 6, 1956: Patient returns feeling fine. Having four to six formed stools per day. Sigmoidoscopy reveals an equivocal polyp at the site of anastomosis but otherwise is negative.

July 28, 1958: Patient has had upper abdominal pain with nausea and vomiting, also melena and hematemesis. Diagnosis of peptic ulcer entertained and advised to have upper gastrointestinal roentgenological studies. Is having five to six stools per day. No diarrhea or bright red blood. Sigmoidoscopy: Three small one to two mm. polyps noted at about 15 centimeters depth. Same removed by fulguration.

Summary

Three members of one family having familial multiple polyposis of the colon are presented, and a pedigree of their large family is included. The Mendelian dominant characteristic is in evidence in the more complete family histories. It is important to note the early age at which individuals in generation II died, presumably on the basis of malignant changes in the disease process. A sibling to our cases had widespread malignancy secondary to polyposis and died of same at the age of 30 years. There appears to be no predilection for either sex in our study. It will be noted that no cases of polyposis have as yet appeared in generations IV and V. This is obviously explained by the young age of these individuals and the lack of case studies due to their asymptomatic state. We can predict with fair accuracy the approximate number of cases who will develop the disease. The family in our study is indeed quite prolific and points out the obvious need for sterilization in all affected individuals.

It is noteworthy to re-emphasize Oldfields' findings of sebaceous cysts and La Berge's *et al.* reports of soft and hard tissue tumors and their apparent association with this disease. Case No. 1 had such a tumor, initially described as a "fibrosed hematoma-like elevation" over her left tibia on physical examination. On cut section, at the time of surgery on April 15, 1958 when it was removed, it was described as giving the appearance of a "sebaceous cyst" and measured approximately two centimeters in diameter. Microscopic examination of this tissue was reported as that of an epidermal cyst. Case No. 2 had a tumor removed from the rectus abdominus muscle and another from the small bowel mesentery. These were described as fibromas or desmoids.

The physician should not be influenced by the young age of the patient nor by the symptoms present, but only by the POSITIVE EVIDENCE OF MULTIPLE POLYPOSIS and the ability of the patient to withstand a colectomy.

Editor's Note: References may be obtained by writing the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 315 W. 4th Street, Topeka, Kansas.

Industrial Doctor

Industrial medicine is growing medical specialty.

A publication reports that over a 25-year period the number of physicians engaged in industrial medicine full-time increased more than five-fold—from 232 in 1934 to 1,247 in 1958. In addition, during this same period, there was an increase of close to 25 per cent in physicians working in this field part-time.

The vast majority of business enterprises have less than 500 employees, and therefore can seldom afford facilities or personnel for industrial health programs. Medical care for these industrial workers is provided most often by general practitioners.

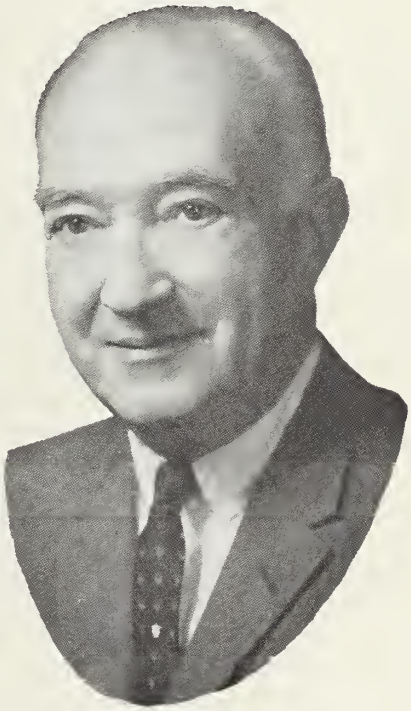
A poll by the American Academy of General Practice some years ago indicated that 93 per cent of its members have some direct or indirect responsibility for medical care of patients with diseases of occupational origin.

The President's Message

Dear Doctor:

After arriving home from the Hutchinson Meeting of the Kansas Medical Society, although I had written an article for the June issue of the Journal, I felt that the Hutchinson Meeting deserved comment and that the other article could certainly be dispensed with until a later date.

Inasmuch as the format of this meeting was different from those in the past, by reason of not having any commercial or scientific exhibits, I will be very interested in the comments of the Society. Next year, the format will be a little different so that a comparison can be made and from this, we hope we can arrive at a format which will make everyone desirous of attending.



I am sure Doctor Peters will have no objection to my restating that this meeting was a huge success and that everyone owes a note of thanks to the Reno County Medical Society—especially to the fine group of doctors' wives who put on such an entertaining program for the members of the Auxiliary.

This seemed to me to be a fitting climax and a tribute to the highly successful year of accomplishments of our President in 1959 and 1960, Dr. Glenn R. Peters.

Cordially Yours,

President

Maternal Mortality

A 27-year-old white gravida VI para V died following delivery of a normal nine pound, four ounce infant. The cause of death being listed as "shock following adrenal collapse due to polyhydramnios with amniotic emboli to the lungs, uterine atony, and bleeding."

History disclosed five previous deliveries without incident other than excessive weight gain with the two preceding. There had been no other illnesses of note.

The final pregnancy was marked by excessive weight gain of 50 pounds despite diet instruction and salt restriction. Hospitalization in the seventh month was advised for purposes of diet stabilization, but it was refused. Fetal heart tones were inaudible during the last six weeks because of increasing polyhydramnios. Slight vaginal bleeding occurred in the seventh month. Some prolonged headaches occurred during the last months and mild to moderate edema developed at the last month. An infected area with a watery discharge appeared on the left ankle a few days before admission to the hospital and Chloromycetin® was prescribed. Otherwise the prenatal course was not remarkable.

The patient was admitted in early labor with mild contractions and one centimeter dilatation of the cervix which was about 50 per cent effaced. The fetal heart was audible at 150 per minute. Pitocin, one milligram, was given intramuscularly 14 hours after admission. The membranes ruptured spontaneously a few hours later, and a normal spontaneous delivery followed under Xylocaine® pudendal block. Ergotrate® was administered both before and after simple expression of the placenta. Following repair of a perineal laceration, the patient was taken to her room apparently in good condition.

Some 3½ hours after delivery, the patient suddenly developed a high temperature, shock without apparent blood loss, and a blushing-type rash. Efforts to combat the shock included Synkamin®, Solu-Cortef®, seven units of blood, one unit of fibrinogen, Dextran®, Methergine®, and intravenous glucose. Consultation was obtained during this time and a second consultant was called some 15 hours after delivery. During that time there had been no improvement. Immediate hysterectomy was advised and carried out. It was noted that the uterus was flabby and that bleeding was more obvious at that time. Cloudy peritoneal fluid was encountered and cultured, subsequently showing growth of hemolytic streptococci.

In addition to the efforts to combat shock, the patient was given penicillin, 1,200,000 units every six hours and intravenous and intramuscular Achromycin®. Death came about 33 hours after delivery during which time urinary output was 250 cc. It was subsequently found that of the chloromycetin capsules prescribed for the ankle infection only two had been taken.

Committee Option

It was felt that the primary cause of shock, an overwhelming septicemia, was missed and that the outcome could have been altered only by the use of heroic doses of antibiotics in addition to the measures utilized. Since the most likely source of such infection was from the ankle infection, there was a definite element of patient neglect in her failure to pursue this treatment.

Classification

Maternal death, indirect obstetric, avoidable.

One of a series of case reports prepared by the Committee on Maternal Welfare to illustrate the type of study made in each instance of maternal death in Kansas.

A Malpractice Action

A Kansas surgeon performed a radical mastectomy and subsequently recommended irradiation therapy. A Kansas radiologist administered cobalt irradiation. The patient subsequently sued the hospital and the radiologist for resulting burns. The district court jury where trial was held found in favor of the defending physician, whereupon the plaintiff appealed to the Kansas Supreme Court.

On April 9, 1960, The Kansas Supreme Court filed an opinion reversing the district court and directed that a new trial should be granted. Two justices, C. J. Parker and J. Price dissented in this opinion.

The Supreme Court lists six points in the syllabus of which one appears to The Kansas Medical Society to have such far-reaching effect upon the practice of medicine in this state, that on May 4, 1960, the Council employed Mr. Kirke W. Dale to request permission to file an amicus curiae brief in an effect to have this portion of the syllabus set aside or amended.

From the syllabus by the court:

Section 4—*"Extent of Physician's Duty to Advise Patient.* Where no immediate emergency exists, a physician violates his duty to his patient and subjects himself to liability for malpractice, upon facts and circumstances more particularly set forth in the opinion, if he makes no disclosure of significant facts within his knowledge which are necessary to form the basis of an intelligent consent by the patient to proposed cobalt irradiation treatment."

In discussing this subject, the court states in part:

". . . The conclusion to be drawn from the foregoing cases is that where the physician or surgeon has affirmatively misrepresented the nature of the operation or has failed to point out the probable consequences of the course of treatment, he may be subjected to a claim of unauthorized treatment. But this does not mean that a doctor is under an obligation to describe in detail all of the possible consequences of treatment. It might be argued, as indicated by the authors of the various law review articles heretofore cited, that to make a complete disclosure of all facts, diagnoses and alternatives or possibilities which may occur to the doctor could so alarm the patient that it would, in fact, constitute bad medical practice. There is probably a privilege, on therapeutic grounds, to withhold the specific diagnosis where the disclosure of cancer or some other dread disease would seriously jeopardize the recovery of an unstable, temperamental or severely depressed patient. But in the ordinary case there would appear to be no such warrant for suppressing facts and the physician should make a substantial disclosure to the patient prior to the treatment or risk liability in tort."

. . . "In considering the obligation of a physician to disclose and explain to the patient in language as simple as necessary the nature of the ailment, the nature of the proposed treatment, the probability of success or of alternatives, and perhaps the risks of unfortunate results and unforeseen conditions within the body, we do not think the administration of such an obligation, by imposing liability for malpractice if the treatment were administered without such explanation where explanation could reasonably be made, presents any insurmountable obstacles.

"The appellant's requested instruction on the duty of a physician to make a disclosure to his patient was too broad. But this did not relieve the trial court of its obligation to instruct on such issue under the circumstances here presented, since the issue was raised by the pleadings. On retrial the instruction should be modified to inform the jury that a physician has such discretion, as heretofore indicated, consistent with the full disclosure of facts necessary to assure an informed consent by the patient.

"On retrial of this case the first issue for the jury to determine should be whether the administration of cobalt irradiation treatment was given with the

informed consent of the patient, and if it was not, the physician who failed in his legal obligation is guilty of malpractice no matter how skillfully the treatment may have been administered, and the jury should determine the damages arising from the cobalt irradiation treatment. If the jury should find an informed consent was given by the patient for such treatment, the jury should next determine whether proper skill was used in administering the treatment." . . .

On about May 11, 1960, Mr. Dale wrote the following application of The Kansas Medical Society to file Brief Amicus Curiae which, except for the heading which identifies the case, is quoted in its entirety.

"The Kansas Medical Society, on behalf of itself and 1822 physician members, requests this Court for leave to file its Brief Amicus Curiae herein upon the pending motions of Appellees for a rehearing in this cause and, if said rehearing be granted, to file an additional brief thereon.

The reasons for this application and request being:

That the relation between physician and his patient, implied in law, is that he possesses that reasonable degree of learning and skill ordinarily possessed by members of his profession and of his school of Medicine in the community where he practices, or similar communities, having due regard for the advance of medical or surgical science at the time, and that he will use such learning and skill in his treatment of the patient with ordinary care and diligence.

A physician is not responsible in damages for want of success, unless it is shown to result from a want of ordinary skill and learning or from a want of ordinary care and attention. He is not presumed to possess extra-ordinary skill or render extra-ordinary diligence and care; nor can he be made responsible in damages for errors in judgment, or mere mistakes in matters of reasonable doubt or uncertainty. His best judgment is constantly appealed to, and upon such judgment he must rely.

Good judgments may differ and, such being the case, the physician must use his own judgment and follow its dictates in all cases of doubt or where there may be a foundation for differences of opinion, and if he exercises such judgment in an enlightened and reasonable manner, he will not be held responsible for errors.

A physician is liable in damages if he fails to possess ordinary learning and skill or fails to use ordinary care and diligence and injury results therefrom, but the burden of proof rests on the patient to show affirmatively that the conditions complained of were caused by the failure of the physician to exercise ordinary care and skill.

Although a physician may be negligent in the performance or omission of some duty owed to the patient, no liability attaches unless the patient thereby suffers injury. There is no liability unless the physician's negligence is the proximate cause of the injury. The physician must be guilty of some act or omission which immediately causes the injury. Such act or omission must be the efficient cause, without which the injury would not have resulted.

Authority or consent is necessary before a physician may legally treat a patient. A physician, who treats or operates upon a patient without having authority so to do, commits an assault and battery, for which he may be held civilly liable in damages, or prosecuted criminally, but negligence is not an element of this cause of action. It is no defense to such cause of action that due skill and care were present and used, and, conversely, lack of due skill and care does not give rise to a cause of action for assault and battery.

'Mal-practice' and 'assault and battery' are separate and distinct causes of action—unrelated to each other. Negligence is an essential element of malpractice. Negligence is not an essential element of assault and battery.

Paragraph '4' of the Syllabus, and the corresponding portion of the opinion, fail, in our opinion, to properly apply the duty to advise and the necessity of consent, to assault and battery, and, on the contrary, apparently erroneously apply this duty and consent to cases arising out of negligence or malpractice.

The Syllabus, and the corresponding portion of the opinion, for the first time, so far as our research discloses, passes upon the duty of the physician to inform. The Court lays down no rule by which a physician can clearly determine his obligation.

In paragraph '4' of the Syllabus, it is stated, in substance, that, where no immediate emergency exists, a physician violates his duty to his patient, and subjects himself to liability, if he makes *no* disclosure of significant facts within his knowledge which are necessary to form the basis of an intelligent consent by the patient.

What would be the rule if an emergency did exist? What would be the liability if an physician made *some* instead of *no* disclosure? What is meant by intelligent consent?

This paragraph leaves too much to speculation and conjecture unless the Court intends to confine each case to its own particular facts and does not intend to lay down a general rule of law. If so, the Court should so clearly state.

The Court, on page 409 of the Opinion, states that the proper rule of law compels disclosure by the physician in order to assure that an informed consent of the patient is obtained, but the duty of the physician to disclose is limited to those disclosures which a reasonable medical practitioner would make under the same or similar circumstances.

How can a physician decide whether he has met the test?

The plaintiff, in the instant case, did consent to the treatments.

If it is not necessary that a physician describe in detail all of the possible consequences of treatment, just what consequences should he describe to the patient?

The Opinion later states that a complete disclosure could so alarm the patient that it would, in fact, constitute bad medical practice. How can a doctor determine how much of a disclosure he should make? How can he tell how each individual patient will react? How can a doctor determine when a complete disclosure would, or would not, constitute bad medical practice? How can he protect himself against possible mal-practice suits for failure to disclose a sufficient amount?

The Opinion then states that there is probably a privilege, on therapeutic grounds, to withhold specific diagnosis where the disclosure of cancer, or some other dread disease, would seriously jeopardize the recovery of an unstable, tempermental or severely depressed patient. What does this mean? Will every physician be forced to qualify himself as a psychiatrist or employ a consultant psychiatrist in an effort to determine to what extent the disclosure should be made?

The Opinion then continues that in ordinary cases there would appear to be no such warrant for suppressing facts and the physician should make a substantial disclosure to the patient prior to the treatment, or risk liability in tort. What is an ordinary case? What is a substantial disclosure? Who knows with reasonable certainty how any patient will react?

Suppose a physician fails to follow the test laid down by this Court but performs a successful surgical operation or medical procedure. Is the failure to inform the patient going to establish liability in negligence when the result of the surgery or procedure is beneficial to the patient and effects a complete recovery?

We can see where a failure to inform and to secure an informed consent might be appropriate in an assault and battery case. We fail to see how it could be appropriate to a negligence or mal-practice case, because the failure to inform and the failure to obtain an informed consent, in and of themselves, could never be the proximate cause of a bad result.

An operation or treatment without consent is, as earlier stated, an assault and battery. Here, however, the plaintiff accepted the cobalt irradiation. The plaintiff knew the purpose of the treatment and the hoped-for results. Her only complaint is that the physician did not explain the nature and consequences of the risks to her, but we find nothing in the Opinion to establish, or even suggest, that she would have refused the irradiation if the nature and consequences of the risks had been explained.

Therefore, how could the failure on the part of the physician to so advise be considered the proximate cause of the injury received? Just what did the physician do or fail to do? What should he have told this patient in order to fulfill his legal obligation? How much or how little should he have told her?

The patient in this case made her own decision to take the treatments relying upon the advice of the surgeon who performed the radical left mastectomy. She sought no additional information from the radiologist but promptly submitted to the irradiation treatments.

This decision should clearly and succinctly state the rule by which a physician must act. All Kansas medical men are now left in a dilemma as to what they should or should not do.

This is a case of first impression on the duty to inform and of vital importance to the medical profession in this state.

We request the opportunity to further express the views of the profession and that we be given sufficient time to file the requested brief.

Respectfully submitted,

Kirke W. Dale

Donald Hickman,

Arkansas City, Kansas
ATTORNEYS FOR APPLICANT"

On May 12, 1960, The Kansas Medical Society was granted until June 1, 1960, leave to file its Brief Amicus Curiae in support of Appellees' motions for a rehearing.

Committee Appointments

Elsewhere in this issue, Dr. F. E. Wrightman, president, lists the committee appointments for the coming year. Approximately 600 members will serve their Society in this capacity.

There is a forward look in this fact since committee activity is the foundation for Society progress. A committee, although designated to perform work in a specified area, is not limited but may plan projects as desired. These, whenever they alter or modify existing Society policy, are submitted to the Council and to the House of Delegates for adoption.

Membership on a committee, therefore, becomes a true opportunity to guide the course of this Society. It entails some effort, but the reward is a Society the physicians and the people of this state find of public service.

Although publication of committee names is completed in this issue, Doctor Wrightman again invites any member who is willing to serve on a committee to advise the executive office, and his name will be added to the list. This will gladly be done because your Society needs the active participation of each member and welcomes the assistance of all.

Watch Out!

It is quite possible the powers that be in Washington have more than one reason for complaining about the prices of drugs. Senator Estes Kefauver's drug price investigating subcommittee would have us believe that the government's sole interest is "simply with the price of drugs—a price which must be paid by someone under any system of medical care." I think there is a psychological reason which they hope to keep under cover. This Senate antitrust investigation is just another cunning approach in the attempt to slip socialized medicine in at the back door. It appears to me that Mr. Kefauver almost gave this fact away in his opening statement when he said: "It is not the purpose of these hearings to question in any way the American system of private medical practice." I react to this statement in the same manner I would if a small boy should rush into my office and exclaim: "Doctor, someone batted a baseball through your back window—and I don't want you to think that I did it."

If these investigators' thoughts were just in the drug field, they should also be concerned about quality as well as price. They certainly have shown a lack of interest in the cost of pharmaceutical research and manufacturing, and without research drugs would soon degrade in both quality and quantity. The Senator's line of reasoning in advocating that druggists be allowed to use generic instead of brand names, would throw the drug business into a tail spin within a short time. If one company spends a million dollars to produce a new drug, and another concern is allowed to copy the formula, pay none of the research cost, and market the product at a low price, the results would be disastrous. The better firms would go broke, initiative to find new drugs would be smothered and we would find ourselves advancing in reverse—back toward the "calomel and castor oil days."

I feel that these governmental probes are motivated, primarily, for publicity. If they can attract enough attention by their investigations of the major drug manufacturing firms, and lead the American people into believing that the prices of drugs are too high, it might be possible to gain a large number of sympathetic listeners.

They hope to stir up enough interest in the drug controversy to swing the spotlight away from the doctors for a while, give us a breathing spell, make us feel complacent and lessen our vigil against legislation like the Forand bill. It is their wish that we don't get wise to their twofold purpose of these investigations in relation to the Forand bill itself. First, they will attempt to convince the lay public that older people, on social security, will not be able to pay the high drug prices—and that the government should step in to help. Second, if these tactics could get a Forand type of legislation passed without enough medical publicity to stir up strong opposition —they would be in position to widen social security to cover everybody. Then we would have socialized medicine under another name.

People, consciously, or unconsciously, associate drugs and physicians together. An aroused populace against drug prices would not be too friendly towards the medical profesion. Such a situation would gain recruits for a more effective battle against the free practice of medicine. While we sit on the side lines, apparently unmolested, and watch the steam roller attempt to crush the drug firms, we must remain alert. We could get caught napping like Hitler did one time during World War II—when the Allied soldiers were issued heavy, long-handled underwear. As soon as the Germans got wind of it, they rushed up to Norway while our troops poured into Africa. It behooves us to watch out for all sorts of misleading tactics, because this drug battle is only a sham attack. The medical profession is their chief objective. They hope to find time to reorganize their forces, turn upon us without warning and launch a surprise attack where and when we might least expect it.

F. Clyde Bedsaul, M.D.

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The Business Side of Medicine

Preparing for Economic Fluctuations

FLOYD F. WEHRENBERG, *Kansas City*

It is important that you build up your investment portfolio in such a way as to provide maximum protection against increases and decreases in the value of the dollar. But how can this be done?

There are two classifications of investments or contracts that will make it possible for you to accomplish this. The first is fixed or dollar contracts such as bonds, savings accounts, and mortgages which have a specified or fixed redemption value. The other is flexible or equity contracts such as corporate stocks and real property having a flexible redemption value depending on the current market level.

Here's What They Do

The flexible contract serves as an inflation hedge. As prices increase and the value of the dollar decreases, the market value of this contract will increase. Conversely, the dollar contract serves as a hedge against price declines and deflation; as the value of the dollar and prices go down, the purchasing power of the dollar contract increases. By maintaining an approximate 60/40 relationship (namely 60 per cent inflation hedges and 40 per cent deflation hedges) in your investment portfolio, the increased value of one type of contract will offset the decreased value of the over-all plan.

This plan should be followed in setting up and fulfilling a retirement plan. When this basic plan has been completed and additional funds are available for investment, the hedging feature may be abandoned, but the original portfolio should be maintained in the above relationship.

Life Insurance and Accounts Receivable

Cash values of life insurance and the discounted value of accounts receivable should both be considered in determining and maintaining the balance between fixed and flexible contracts.

While this plan is basically sound, it cannot be considered a perfect hedge since the market situation of one investment may vary more than another. However, it is generally accepted as the most suitable economic hedge that can be achieved.

To give an example of this plan in operation, assume that a portfolio contains $800 in savings and loan deposits and $1,200 in good grade common stocks. If there were a 50 per cent inflation of the dollar, the purchasing power of the savings would be reduced to $400 and the purchasing power of the common stocks would be increased to $1,800. In the same manner, if the dollar were deflated 50 per cent the common stocks would be reduced to $600 and the savings increased to $1,200 purchasing power.

Recognizing that the market will fluctuate, if the above plan is followed, you will have more dollars in an inflation period and fewer dollars in a deflation which is economically sound.

Mr. Wehrenberg is Missouri-Kansas manager, Professional Management Midwest, 4010 Washington Street, Kansas City, Missouri.

My life has been full of terrible misfortunes, most of which never happened.—*Montaigne*

Blue Shield

Annual Enrollment to Take Place

The annual enrollment in Blue Cross-Blue Shield for the Kansas Medical Society Association Group will take place during the months of June, July, and August. This is the opportunity for all physician units in the Kansas Medical Society to enroll in one large group in order to have the benefits and rates of group membership.

The Kansas Medical Society's Blue Cross-Blue Shield Group was started in 1957 and at the present time there are 330 physician units enrolled in this group representing 1,650 family contracts. This means that approximately 5,000 people are enrolled in Blue Cross-Blue Shield through the Kansas Medical Society's Association Group.

On another page of this issue is a full explanation of the reopening dates for the Medical Society Group with a coupon to be mailed in by groups who want to enroll at this time. This is the period when new groups can enroll and new members can be added to present groups.

Not Include Wyandotte

William H. Heleker, Association Enrollment Manager for Kansas Blue Cross-Blue Shield, emphasizes, however, that this enrollment does not include physicians in Johnson and Wyandotte Counties. They are members of the Kansas City, Missouri Blue Cross-Blue Shield Plan.

A dues increase is necessary with this reopening according to Mr. Heleker. Present Blue Cross dues are $7.20 and the new dues will be $8.70. Present Plan A Blue Shield dues are $3 and the new dues will be $4.10.

"This is necessary," Mr. Heleker pointed out "because of the increased utilization by the members of this group in both Blue Cross and Blue Shield."

For example, from June 1, 1958 to March, 1960, Blue Cross' actual dues income from the Kansas Medical Society Group was 180,071.76 while the amount paid out to hospitals by Blue Cross for actual case expense for members of this group was $202,-271.64. In Blue Shield, the actual income from June, 1958 to March, 1960 from the members of this group was $105,956.60. Actual case expense to physicians during this same period for the members of this group was $119,570.43.

Effective date for the new enrollees during this period, as well as the new dues, is August 1.

Fisher Elected President

Dr. James B. Fisher, Wichita, was elected President of Kansas Blue Shield at the annual meeting of the Board of Directors in Hutchinson, Sunday, May 1. The annual meeting of the Blue Shield Board is held on the Sunday preceding the opening of the Kansas Medical Society meeting.

Dr. Fisher, who succeeds Dr. Edward J. Ryan, Emporia, has been a member of the Blue Shield Board since May, 1954. He was elected 2nd Vice-President in 1956 and since 1957 has been the Board's 1st Vice-President.

He was graduated from The University of Kansas School of Medicine in 1936, and since that time has practiced his profession in Wichita, where he is associated with the Wichita Clinic. Dr. Fisher is a fellow of the College of Physicians, and certified by the Board of Internal Medicine.

He is active in the Sedgwick County Medical Society and the Kansas Medical Society, and is a member of the staffs of St. Francis and Wesley Hospitals in Wichita. Dr. and Mrs. Fisher and their three sons, Richard, Alan, and Tom, live at 656 Edgewater Road in Wichita.

(Continued on page 376)

Annual Meeting

Officers Elected and Specialty Group Sessions

The 101st annual meeting of the Kansas Medical Society, held in Hutchinson, May 2-4, was attended by 365 members of the Society. Also registered for the session or affiliate meetings were 105 guests, 145 members of the Kansas Medical Assistants' Society, 135 members of the Woman's Auxiliary to the Kansas Medical Society, and 167 members of the Kansas Society of Medical Technologists.

The program announced in the April issue of the JOURNAL was presented. The annual banquet was highlighted by the administration of oath of office as president for 1960-1961 to Dr. F. E. Wrightman, Sabetha, with Dr. Glenn R. Peters, Kansas City, presiding. Entertainment was furnished by the "Spirit of Kansas" singers from Wichita who presented a Centennial of Kansas in song. Another special event of the evening was the presentation of an Outstanding Service Award to Dr. F. D. Murphy, Chancellor of the University of Kansas.

Officers for 1960-1961

President ..... Dr. F. E. Wrightman, *Sabetha*
President-Elect ..... Dr. H. M. Glover, *Newton*
Immediate Past President . Dr. Glenn R. Peters, *Kansas City*
First Vice-President ..... Dr. N. L. Francis, *Wichita*
Second Vice-President ..... Dr. H. St. Clair O'Donnell, *Ellsworth*
Constitutional Secretary ..... Dr. George E. Burket, Jr., *Kingman*
Treasurer ..... Dr. J. L. Lattimore, *Topeka*
A.M.A. Delegate, 1960-1692 .... Dr. G. F. Gsell, *Wichita*
A.M.A. Alternate, 1960-1962 .... Dr. H. Clair O'Donnell, *Ellsworth*
A.M.A. Delegate, 1961-1963 ..... Dr. L. R. Pyle, *Topeka*
A.M.A. Alternate, 1961-1963 ..... Dr. Glenn R. Peters, *Kansas City*

Councilors for 1960-1961

1. Dr. Emerson D. Yoder, Denton, term expiring 1963
2. Dr. Joseph W. Manley, Kansas City, 1961
3. Dr. George R. Maser, Mission, 1963
4. Dr. Dick B. McKee, Pittsburg, 1961
5. Dr. Ralph G. Ball, Manhattan, 1963
6. Dr. James A. McClure, Topeka, 1962
7. Dr. J. L. Morgan, Emporia, 1962
8. Dr. J. Gordon Claypool, Howard, 1963
9. Dr. J. C. Mitchell, Salina, 1963
10. Dr. John N. Blank, Hutchinson, 1962
11. Dr. William J. Reals, Wichita, 1961
12. Dr. Albert C. Hatcher, Wellington, 1962
13. Dr. H. St. Clair O'Donnell, Ellsworth, 1961
14. Dr. Clair J. Cavanaugh, Great Bend, 1961
15. Dr. Lyle G. Glenn, Protection, 1961
16. Dr. Edward F. Steichen, Lenora, 1962
17. Dr. J. O. Austin, Garden City, 1963

Editorial Board

Dr. Orville R. Clark, chairman of the Editorial Board and Editor of the JOURNAL, was reappointed to both positions at a meeting of the Council held in Hutchinson on May 4 following the last House of Delegates. Dr. John A. Segerson was also reappointed to a three-year term on the Board. Serving with them are Dr. David E. Gray and Dr. Dwight Lawson. All are Topeka physicians.

Blue Shield

Dr. James B. Fisher, Wichita, was elected president of the Kansas Blue Shield at a meeting held during the past state meeting. He succeeded Dr. Edward J. Ryan, Emporia. Other officers elected during the session were: Dr. E. Burke Scagnelli, Dodge City, first vice-president; Dr. Robert Purves, Wichita, second vice-president; and Dr. Charles S. Joss, Topeka, secretary. The next annual meeting of this service will be held the Sunday preceding the Society's annual meeting in the same town.

E.E.N.T. Section

Elected to serve as officers of the E.E.N.T. Section of the Kansas Medical Society for the coming year, at a meeting held during the last Annual Meeting, are: president, Dr. Joseph A. Budetti, Wichita; vice-president, Dr. C. T. McCoy, Hutchinson; secretary, Dr. Ruth Montgomery-Short, Halstead. The council representative elected at the meeting was Dr. Clifford Mullen, Kansas City. His alternate was Dr. Byron Ashley, Topeka; and the Delegate is Dr. C. T. McCoy. The Section's next meeting will be held in conjunction with the Society's 1961 meeting in Wichita.

Kansas Medical Assistants Society

The 20th annual meeting of the Kansas Medical Assistants Society was held in Hutchinson, April 30, May 1-2. At its business session the group installed Mage Slaymaker, Newton, as president. She will be assisted during her year in office by Virginia Brand, Lawrence, president-elect; Norma Pryor, Wichita, vice-president; Kay Bradford, Lawrence, secretary; Jenevieve Carter, Salina, treasurer; Gertrude Suenram, Halstead, corresponding secretary; and Catherine Kibbee, Kansas City, second vice-president. Its next annual meeting will be held in Wichita, two days before the Kansas Medical Society's annual meeting.

Woman's Auxiliary to the Kansas Medical Society

Mrs. Chester Young, Kansas City, was installed as president of the Woman's Auxiliary to the Kansas Medical Society at the close of the organization's annual convention in Hutchinson, May 2-4. Other of-

ficers elected at that session were: president-elect, Mrs. W. T. Braun, Pittsburg; first vice-president, Mrs. H. Lee Barry, Wichita; second vice-president, Mrs. R. H. O'Neil, Topeka; third vice-president, Mrs. Lee Leger, Kansas City; fourth vice-president, Mrs. E. Burke Scagnelli, Dodge City; treasurer, Mrs. Lyle Glenn, Protection; recording secretary, Mrs. Virgil Brown, Sabetha; corresponding secretary, Mrs. James G. Lee, Kansas City. Their next annual session will be held in conjunction with the Society's at Wichita.

Kansas Society of Medical Technologists

Gwendolyn Haegert, Topeka, was installed as president of the Kansas Society of Medical Technologists at the close of the organization's 13th annual convention in Hutchinson on May 3-4. Other officers are: Sister Mary Dolorita, Wichita, president-elect; Barbara J. Clark, Wichita, secretary; Barbara Roberts, Topeka, treasurer; and board members Janice Dubbs, Wichita, James Bush, Topeka, and Carolyn Crocker, Kansas City. The next annual meeting site will be Wichita at the same time as the Medical Society's meeting.

Kansas State Obstetrical Society

Officers of the Kansas State Obstetrical Society for the 1960-61 year were chosen in March at a meeting held in Wichita. The physicians elected to office at that time were: Dr. Henry M. Foster, Hays, president; Dr. Arnold Baum, Dodge City, president-elect; Dr. David Gray, Topeka, vice-president; Dr. Galen Fields, Scott City, secretary. Their next meeting will be the third Thursday in March 1961. The place has not been decided yet.

Kansas Chapter, American College Of Chest Physicians

The following officers were named by the Kansas Chapter of the American College of Chest Physicians at their annual meeting: Dr. Roy A. Lawson, Jr., Chanute, president; Dr. Benjamin Matassarin, Wichita, vice-president; and Dr. John G. Shellito, Wichita, secretary-treasurer.

The Chapter held its last annual meeting in conjunction with the Society's state meeting in Hutchinson. They plan to hold their next meeting with the Society in Wichita in 1961.

Kansas Chapter of the American Society of Clinical Hypnosis

A meeting of the Kansas Chapter of the American Society of Clinical Hypnosis was held in December and Donald W. Smitherman, Ph.D. was elected president of the Chapter. Serving with Dr. Smitherman for the coming year is Earl R. Sheets, D.D.S., vice-president; and Dr. Hugh D. Riordan, Wichita, secretary-treasurer. The Chapter holds a monthly meeting scheduled the second Saturday of the month at 3101 E. Ninth, Wichita.

Kansas Pediatric Society

Officers for the 1960-61 year were chosen by the Kansas Pediatric Society at a meeting held in Emporia, September 12. The following were named: Dr. Thomas C. Hurst, Wichita, president; Dr. William H. Crouch, Topeka, vice-president; and Dr. Richard L. Dreher, Salina, secretary-treasurer. Their next meeting will be in Emporia, at the Broadview Hotel on September 10, 1960. Dr. Robert Good of the University of Minnesota will speak on Renal Diseases.

Kansas Members of the American College Of Physicians

The Governor for Kansas to the American College of Physicians was chosen at a past annual meeting of the Kansas members of that society. He was Dr. Fred J. McEwen, Wichita. He was elected for a three year term. The more recent meeting was held in Kansas City on March 4. Their next annual meeting will take place in Topeka on March 3, of next year. The College's membership is limited to Board Certified Internists or Board Qualified men. Its membership also includes such allied groups as Pathologists, Neuropsychiatrists, etc.

Kansas Wing of the Flying Physicians Of America

Dr. Edward F. Steichen, Lenora, was elected president of the Kansas Wing. Dr. C. F. Taylor, Norton, was re-elected secretary-treasurer of the organization. The Wing had a fly-in in Wichita in April 10, and one was scheduled for Scott City on May 22.

Kansas Chapter of the American College Of Surgeons

At their last annual meeting the members of the Kansas Chapter of the American College of Surgeons elected to the office of the presidency, Dr. G. E. Kassebaum, El Dorado. They also elected Dr. H. S. O'Donnell, Ellsworth, vice-president; and Dr. Robert W. Myers, Newton, was re-elected secretary. Their last meeting was held in El Dorado in October 1959. Their next annual meeting is scheduled for October 1960.

Kansas Chapter of the American Academy Of General Practice

Dr. Cloyce A. Newman, Topeka, is president of the Kansas Chapter of the American Academy of General Practice. Since that group has changed its meeting dates, no election was held recently. The group will hold its next annual meeting in Hutchinson October 19-20. Dr. Newman will retain office until then. Dr. J. Allen Howell, Wellington, who is

now the president-elect will be handed the gavel then. The secretary for the organization is Dr. N. H. Overholser, El Dorado.

Kansas Society of Anesthesiology

At the recent annual meeting of the Kansas Society of Anesthesiology the following officers were elected: Dr. Ray T. Parmley, Wichita, president; Dr. E. L. Frederickson, Kansas City, vice-president; Dr. P. H. Robinson, Wichita, secretary; and Dr. Joyce Sumner, Hutchinson, treasurer. The next meeting place and date of the Anesthesiology society is not yet decided.

Kansas Radiological Society

The Kansas Radiological Society recently elected to its executive offices the following physicians: Dr. James R. Stark, Wichita, president; Dr. Roger K. Wallace, Manhattan, vice-president; and Dr. Lewis G. Allen, Kansas City, secretary-treasurer. Their meeting was held in conjunction with the Society's annual meeting. Their next meeting is scheduled for Emporia in October.

Kansas Orthopedic Club

Dr. John Jarrott, Hutchinson, reports that the Kansas Orthopedic Club officers remain the same as last year with himself as president; and Dr. Henry O. Marsh, Wichita, secretary-treasurer. The Club plans to hold a meeting in September and elect officers.

Kansas District Branch of the American Psychiatric Association

At its spring meeting in March the Kansas District Branch of the American Psychiatric Association elected to the office of the president Dr. John Grimshaw, Topeka. Serving with Doctor Grimshaw are Drs. Richard Schneider, Kansas City, vice-president; Raymond Reinert, Topeka, secretary; and William Robinson, III, Topeka, treasurer. The Branch's next meeting is scheduled in the fall. The date and place may be obtained by writing the secretary.

The Kansas Medical Golf, Trap, and Skeetshooting Association Awards—1960

Golf

Championship Flight

Winner: H. P. Jones, Lawrence—Gift Certificate, *Coe Surgical* and Trophy, *Quinton Duffens*
2nd Lo Gross: Ed Ashley, Chanute—Golden Hour Clock, *Abbott Labs*
3rd Lo Gross: R. P. Norris, Wichita—Leather Bag, *Pet Milk Co.*
4th Lo Gross: H. Lee Barry, Wichita—12 golf balls, *Massengill*
5th Lo Gross: R. K. Purvis, Wichita—Desk Pen Set, *Armour*
6th Lo Gross: J. W. Shaw, Wichita—6 golf balls, *Lederle*

1st Lo Net: H. L. Bunker, Jr., Junction City—Trophy and Electric Razor, *Carl Hayes*
2nd Lo Net: W. C. Goodpasture, Wichita—Transistor Radio, *Self Service Drug*
3rd Lo Net: Fred Bosilevac, Kansas City—Club bag, *Roche*
4th Lo Net: H. F. Joseph, Lawrence—$10 cash prize, *Wess Drug Store*
5th Lo Net: Wm. R. Lentz, Seneca—Sport shirt, *Meschke's*
6th Lo Net: Fred Ford, Topeka—6 golf balls, *Murray*

First Flight

Winner: W. D. Pitman, Pratt—Trophy and 6 golf balls, *Isle*
2nd Lo Gross: Jack Tiller, Wichita—3 golf club covers, *American Optical*
3rd Lo Gross: Ralph Hale, Wichita—Emergency Surgical Kit, *Geigy*
4th Lo Gross: L. E. Knapp, Wichita—Toilet Kit, *Folty*
5th Lo Gross: J. M. Stout, Hutchinson—3 golf balls, *Isle*
6th Lo Gross: George Keene, Wichita—3 golf balls, *Isle*

1st Lo Net: L. L. Saylor, Topeka—Set steak knives, *Mead Johnson*
2nd Lo Net: Byron Ashley, Topeka—Plaque, *Munns*
3rd Lo Net: A. L. Ashmore, Wichita—Leather wallet, *Peyne's*
4th Lo Net: E. K. Enns, Newton—Mennen shave kit, *Woody's*
5th Lo Net: E. L. Fitzgerald, Hutchinson—3 golf balls, *Eli Lilly*
6th Lo Net: W. W. Pierson, McPherson—3 golf balls, *Eli Lilly*

Second Flight

Winner: Jack Perkins, Hutchinson—Trophy and 6 golf balls, *Weeks*
2nd Lo Gross: George Gsell, Wichita—Sports shirt, *Reed Carnick*
3rd Lo Gross: C. V. Minnick, Junction City—Alarm clock, *Ciba*
4th Lo Gross: James Gough, Chanute—Returning golf ball, *Cuberly*
5th Lo Gross: M. J. Cox, Dodge City—3 golf balls, *Lilly*
6th Lo Gross: Leo Crumpacker, Wichita—3 golf balls, *Lilly*

1st Lo Net: R. J. Ohman, Dodge City—Set steak knives, *Mead Johnson*
2nd Lo Net: D. L. Cooper, Manhattan—Plaque, *Munns*
3rd Lo Net: W. T. Braun, Pittsburg—Electo Put, *Wiley's*
4th Lo Net: John Kennedy, Topeka—8 glasses, *Pitman Moore*
5th Lo Net: E. N. McCusker, Halstead—3 golf balls, *Weeks*
6th Lo Net: Harold Smith, Lincoln—3 golf balls, *Weeks*

Third Flight

Winner: George Milbank, Wichita—Trophy and 6 golf balls, *Eaton*
2nd Lo Gross: L. E. Woodard, Wichita—Sports shirt, *Reed Carnick*
3rd Lo Gross: Ernest Mitts, Bonner Springs—Alarm clock, *Ciba*
4th Lo Gross: Thomas Dechairo, Westmoreland—Radar light, *Wiley's*

1st Lo Net: T. C. Hurst, Wichita—"The Surgeon and the Child," *Saunders*
2nd Lo Net: H. R. Hodson, Wichita—Ladies handbag, *Smith, Miller & Patch*
3rd Lo Net: J. T. Grimes, Lyons—3 golf balls, *Eaton*

Fourth Flight

Winner: Donald J. Cronin, Wichita—Trophy and 6 golf balls, *Goetze-Niemer*
2nd Lo Gross: Arthur H. Bacon, Wichita—Cross pen, *U.S. Vitamin Corp.*
3rd Lo Gross: Newton C. Smith, Arkansas City—3 golf balls, *Eaton Lab.*

1st Lo Net: Thomas F. Taylor, Phillipsburg—1 cream and sugar set, *Smith, Kline & French*
2nd Lo Net: Harry Lazar, Wichita—3 golf balls, *Eaton Lab.*
3rd Lo Net: Ivan E. Rhodes, Wichita—3 golf balls, *Eaton Lab.*

Fifth Flight

Winner: Proctor Redd, Topeka—Trophy and 3 golf balls, *Eaton Lab.*
2nd Lo Gross: M. L. Masterson, Paola—Haematology Blood Atlas, *Sandoz Pharmaceuticals*
3rd Lo Gross: Robert D. Wood, Peabody—3 golf balls, *Eaton Lab.*

1st Lo Net: Donald Marchbanks, Hill City—One set glasses, *Pitman Moore*
2nd Lo Net: Royal A. Barker, Council Groves—3 golf balls, *Lederle*
3rd Lo Net: Marion E. Nunemaker, Hutchinson—3 golf balls, *Lederle*

Trap

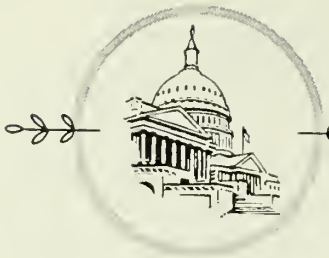
Winner: E. A. Smiley, Junction City—Trophy
2nd Murray C. Eddy, Hays—Sports Jacket, *Black Drug Co.*
3rd Edward S. Brinton, Wichita—Sun glasses, *American Optical Co.*

Skeet

Winner: Clayton L. Scuka, Wichita—Trophy
2nd George L. Gill, Sterling—Derringer Pistol, *Black Drug Co.*
3rd Murray C. Eddy, Hays—Sports shirt, *Meschke Clothing Co.*

Officers of The Association

President: V. R. Moorman, Hutchinson
Vice President—Golf: Ralph Hale, Wichita
Vice President—Trap: George L. Gill, Sterling
Secretary-Treasurer: Frederick L. Ford, Topeka



Washington HIGHLIGHTS

This summary of Washington news is prepared by the A.M.A. Washington Office for distribution to state medical journals.

Politics now overshadows all other factors in the issue of health care for the aged.

It appears certain to be a major issue in this year's campaigning for the White House and Congress, regardless of what Congress does in the field before adjourning this summer.

Political Football

Both the Democrats and the Republicans are supporting costly, sweeping plans which differ on the basic approach. The major Democratic plans call for use of the Social Security System. The Republican proposals would have the Federal government and the states put up hundreds of millions of dollars to help the aged buy health insurance on a voluntary basis.

The medical profession and allied groups oppose these political solutions because, among many other important reasons, they actually would not meet the problems of many aged who need help in financing the cost of illness.

A Key Democrat Warns

Meanwhile, a key Democrat—Rep. Burr Harrison of Virginia—warned Congress against acting on such legislation in this year of a national election. He predicted that if any such legislation should be approved this year, it "would be certain to be a monstrosity."

Noting that various solutions had been proposed, Harrison said:

"The only features which these proposals have in common are that they are all tremendously expensive; they all propose revolutionary change, and they are all complicated, uncertainly-based and little-understood by the prospective beneficiaries."

Harrison, who is a member of the House Ways and Means Committee which handles such legislation, urged that Congress defer action until next year. He recommended that, in the meantime, the Ways and Means Committee "conduct an exhaustive study of the various proposals."

Ike's Plan

In early May, the Eisenhower Administration unveiled a Federal-state, $1.2 billion-a-year plan to help the aged with limited incomes buy broad medical and hospital insurance coverage. Under the plan, an aged person—if able financially—would bear part of the cost of both the insurance and of the medical care and hospitalization.

Arthur S. Flemming, Secretary of Health, Education and Welfare, and Vice President Richard M. Nixon stressed that participation by the aged in the Administration program would be on a voluntary basis.

The Administration's plan immediately ran into widespread opposition. Dr. Louis M. Orr, Orlando, Fla., President of the American Medical Association, said it was based "on the false premise that almost all persons over 65 need health care and cannot afford it."

15% Not 100% Says A.M.A.

"This is not a fact," Dr. Orr said. "The truth is that a majority of our older people are capable of continuing a happy, healthy, and, in many cases, productive life. Of the more than 15 million persons in the nation over 65 years of age, only 15 per cent are on old-age assistance."

Dr. Orr said neither the Administration's proposal nor the Forand-type Social Security approach is tailored to meet the problems of the undetermined number of older persons who, "although able to finance other costs, find it difficult to withstand the additional burden of the cost of illness."

Dr. Orr advocated the A.M.A.'s positive eight-point program for the health care of the aged as a "sensible, economical" plan that would preserve freedom as well as promote security. If both these objectives are to be realized, Dr. Orr said, health care programs for the aged "must necessarily be limited to support for the needy aged and leave to voluntary, competitive, private enterprise, those activities needed to improve the health care of the rest."

The Eight-Point Plan

In brief, the A.M.A. program comprises: 1) improved preventive medical care for the aged; 2) a state-administered program of Federal grants-in-aid to states for liberalization of existing old-age assistance programs so that the near-needy could be given health care without having to meet the present rigid requirements for indigency; 3) better nursing home facilities for the long-term care of aged persons, especially those over age 75; 4) rapid development of health insurance and prepayment policies to provide long-term nursing home care;

5) Expansion of home nursing care services; 6) elimination of compulsory retirement and a basic change in the attitude that a person who reaches 65 has suddenly become non-productive and senescent; 7) health education to instill a "will to live" in older persons and to make them aware of the need for continuing healthful nutrition; and 8) anti-inflationary curbs to maintain the purchasing power of fixed pension and annuity benefits.

A Republican Speaks Out

A Republican lawmaker, Sen. Barry Goldwater of Arizona, denounced the Administration's plan as "socialized medicine" and a "dime store new deal." The outspoken conservative predicted its ultimate cost would be "staggering." He said the Administration could have done better by proposing "full deductions for taxes for any amount spent for medical care of anyone" and for full costs of health plans by either an individual or corporation.

In endorsing the Administration's plan, Vice President Nixon charged the Forand-type proposals backed widely by Democrats would "open the door for socialized medicine." He said:

"The Forand bill and similar plans would set up a great state program which inevitably would head in the direction of herding the ill and elderly into institutions whether they desired this or not. Such a state program would threaten the high standards of American medicine."

Senator Pat's Legislation Costs

Sen. Pat McNamara (D., Mich.), Chairman of the Senate Subcommittee on Problems of the Aged, headed a group of 16 Senate Democrats who sponsored legislation that would provide hospitalization and medical care for virtually all the nation's older persons.

The co-sponsors included three avowed candidates for the Democratic nomination for president—Sens. Hubert H. Humphrey (Minn.), John F. Kennedy (Mass.), and Stuart Symington (Mo.).

Cost of the McNamara legislation was estimated at $1,578,000,000 a year. This would be financed by a one quarter per cent increase in the Social Security tax and 370 million dollars from general tax money.

Occupational Illness

Occupational illnesses, which presently number about 3,000 in this country, are increasing at the rate of approximately 200 new disease entities a year.

A publication reports that occupational illnesses now account for an estimated 10 per cent of the total annual U. S. wage loss of $4,200,000,000 due to illness.

The increased incidence of occupational diseases is attributed mainly to new chemical compounds being introduced by industry at the rate of one every 24 minutes. Of these, a significant number possess properties potentially harmful to workmen.

One possible danger in this constantly increasing production is the risk of exposing workmen to new and unknown carcinogens. It warns that "new products and methods of production should be carefully studied in order to guard workers against such harmful exposure."

Health hazards in industry range from fiber glass to actinic rays. In one study of more than 300,000 civil service personnel, 18 per cent of injuries and medical conditions were of occupational origin. Physical agents (e.g. actinic rays, heat, cold, pressure) produced the highest incidence rate of these occupational conditions, accounting for 42 per cent; skin irritants (e.g. oils, greases, acids and alkalies, fiber glass) ranked second, with 35 per cent; and inhalation hazards (e.g. mists and fumes, dusts, gases) were third, with 20 per cent.

Commonest industrial health problem is occupational dermatitis and about 90 per cent of dermatoses are caused by contact with chemicals. In the manufacturing industries, slightly less than half of occupational dermatitis cases are attributed to petroleum products.

Despite its incidence, however, occupational dermatitis "tends to be temporary in nature and less costly than most other occupational diseases" (average cost per case in New York is $698).

Still the No. 1 occupational disease in the U. S. in terms of disability and compensation costs, despite advances in dust control measures, is silicosis. Silicosis claims, for example, which represent only three per cent of claims, account for more than one quarter of all compensation awarded in occupational disease cases by the New York State Workmen's Compensation Board.

Official Proceedings

Report of 1960 Meeting of the House of Delegates

Contained herein is a summary of all action taken by the House of Delegates during the 1960 Annual Session of the Kansas Medical Society held in Hutchinson, Kansas, May 2-4. Omitted in this report is only that portion of the minutes describing who made motions and the description of the discussion. All official action is recorded.

First Session

The First Meeting of the 1960 House of Delegates convened at breakfast, 7:30 A.M. on Monday, May 2, 1960. The meeting was opened by the president. He announced the appointment of two reference committees, the first on officers, councilors, committee, and special reports consisted of Norton L. Francis, M.D., Wichita, chairman; John L. Blank, M.D., Hutchinson; and George R. Maser, M.D., Mission.

Second Reference Committee on Resolutions was appointed consisting of J. W. Manley, M.D., of Kansas City, chairman; H. M. Glover, M.D., Newton; and E. D. Yoder, M.D., Denton.

The quorum was declared present with an official count at the opening of the meeting of 55 delegates, 10 past presidents, seven officers and 10 councilors, for a total of 82 plus guests.

First item of business was announced by Doctor Peters on a special project for which he asked the rules be suspended and emergency declared. This was accomplished and Dr. Franklin D. Murphy was awarded by proclamation the Outstanding Service Award for 1960 through the presentation of a plaque at the banquet on Tuesday evening, reading:

> *"The Kansas Medical Society presents the 1960 Outstanding Service Award to Franklin D. Murphy, M.D., for his inspiration, his devotion and his leadership as Dean of the Medical School and as Chancellor of the University of Kansas toward solving the problems of health care for the people of this state."*

The constitutional secretary, George E. Burket, Jr., M.D., reported a total membership of 1,833, being 11 more than were reported a year ago. Of this number the dues-paid members were 1,448, honorary members 168, leave-of-absence members 43, in-service members five, delinquent members 169.

The president then called on John L. Lattimore, M.D. for the treasurer's report. He read excerpts from the provisional audit and declared the Council would find it necessary to increase dues for the year 1961, in that the Society was now spending more than was received through the payment of dues.

In the absence of Orville R. Clark, M.D., of Topeka, editor of the JOURNAL OF THE KANSAS MEDICAL SOCIETY, the report he prepared was read to the House of Delegates as quoted here:

For the ninth year I am reporting to you as the Editor of the JOURNAL. The Editorial Board is the same as last year, and includes Drs. Richard Greer, David E. Gray, Dwight Lawson, and John A. Segerson. Each of them has been most faithful in the reading and evaluation of manuscripts and the numerous other tasks which are delegated to them, and each is deserving of your appreciation.

During the past year we were sorry to lose the services of Dr. Vernon E. Wilson, when he left Kansas University School of Medicine to assume his new duties with Missouri University. His work was always done efficiently and unpretentiously, and always most helpfully for us. We are fortunate in being able to continue our excellent cooperation and service from the Medical Center through the assistance of Dr. Jesse D. Rising, who is now the Associate Editor at that location. He had previously served as one of the editors of the Clinical Pathological Conferences, and has now shown his willingness and his ability by the preparation of the large March issue of the JOURNAL, which is the annual Kansas University issue.

Mr. Dallas Whaley assumed the duties of Managing Editor at the time of the annual meeting last year. Coming to the job with no previous introduction to our procedures made it more difficult for him, but his services have come to mean much to us, and he is obviously doing an increasing percentage of the JOURNAL work.

The 1959 volume contained 184 pages more of text than the 1958 volume, but this was primarily due to the 180 page Centennial issue which was distributed in May. Approximately the same number of original articles, tumor conferences, clinical pathological conferences, and student theses have been included.

The March, 1960, issue was, as customary, the Kansas University Medical Center number—the 14th year this privilege has been ours. As mentioned earlier, Dr. Rising performed a monumental task in stimulating, assembling, and editing the 11 articles in the issue. The KUMC issue has, for a number of years, been the largest single number which we have,

and we are grateful to the members of the faculty for providing this material to us.

During the last year department headings of distinctive and original designs have been introduced and we believe they help to dress up the pages.

Reference was made to the Centennial Issue in my report a year ago, but perhaps I may be forgiven for some repetition on this, a subject which was quite dear to the hearts of the members of the Board after the many hours devoted to its preparation. We have appreciated the complimentary comments from a number of our members, and from others to whom the book was sent. As you all know, a word of encouragement helps a lot sometimes.

Copies of the Centennial Issue have been sent to all hospitals in Kansas for inclusion in their libraries, and notes of appreciation have been received from several of them.

We have, I believe, published more reports of Society Committee work—Maternal Welfare, Tuberculosis, Blue Shield, Hearing and Speech, and others. This is, we think, an important function of the JOURNAL and we would welcome any contributions which other committees wished to have distributed—either isolated reports, or those to appear on a regular schedule.

The financial condition of the JOURNAL is satisfactory. I will not bore you with details here, but they may be had by anyone particularly interested.

It has been a pleasure to have served the Society again, and I hope that any of you will impart to me any suggestions for changes in the JOURNAL. I cannot assure you that all suggestions will be adopted, but I *can* assure you that they will all be given careful consideration.

Respectfully submitted,

Orville R. Clark, M.D.

Editor

President then called upon Norton L. Francis, M.D., chairman of the Reference Committee on Reports, who introduced 51 resolutions gleaned from the reports previously published. Following this there were seven additional resolutions submitted by the membership on the floor to be reported in detail at the Second House of Delegates as action was taken.

Following this Doctor Peters asked Fred E. Wrightman, M.D., president-elect, to read the names of all physicians who died during the year. At the conclusion, the president had the House of Delegates rise in a tribute to their memory.

Second Session

The Second Meeting of the House of Delegates was held on Wednesday, May 4, 1960, beginning at 11:30 A.M. It was found by the registration that a quorum was present and the first order of business was the balloting of names for the officers for the coming year. Immediately after this, the ballots for the Nominating Committee were distributed. Tellers were appointed and the results are published elsewhere in the JOURNAL.

J. W. Manley, M.D., Kansas City, chairman of the Reference Committee on Resolutions, then read each resolution separately which was discussed and eventually acted upon. In this portion of the report, the action only is summarized as a statement of present policy of the Kansas Medical Society.

Resolution No. 1—a word of gratitude to the councilors for their service to the Society and accepting the report of the councilors.

Resolution No. 2—combined with Resolution No. 55, introduced by the Crawford County Medical Society because they were similar:

AMERICAN MEDICAL ASSOCIATION DUES

WHEREAS, the American Medical Association has greatly expanded its area of service, and

WHEREAS, of 1,600 dues-paying members of the Kansas Medical Society, only 1,200 belong to the American Medical Association, and

WHEREAS, numerous state medical societies require membership in the American Medical Association as a requisite for membership in the state and county medical societies,

Be It Therefore Resolved that beginning January 1, 1961, a physician cannot belong to the Kansas Medical Society or to a component society within this state unless he also belongs to the American Medical Association, and

Be It Further Resolved that his dues-paying status with the American Medical Association, except for the special category whereby American Medical Association members are exempt from paying dues after the age of 70, shall correspond with that of the Kansas Medical Society.

Resolution No. 3—the House endorsed the Council resolution to co-operate with all levels of education toward their improvement.

Resolution No. 4—endorsed the Council resolution to continue to care for indigent patients, but that further conferences will be held with the Board of Social Welfare if and when a tangible plan is presented for improving health service to the indigent.

Resolution No. 5—an expression of gratitude to Glenn R. Peters, M.D., president, and to the officers of the Society.

Resolution No. 6—declaring that the Medical Society shall co-operate with Kansas Blue Cross-Blue Shield in formulation of a policy of hospital and

medical care to all self-supporting persons regardless of age.

Resolution No. 7, 8, 9, 57, 58 were combined because they were similar, declaring that Podiatrists and Physical Therapists shall not be included under Blue Shield or under the Healing Arts Act until they meet all the standards required of the Healing Arts Act.

Resolution No. 10—postponing action with reference to licensing of Physical Therapists until the American Medical Association study on this subject is completed.

Resolution No. 11—supported the Auxiliary request that when needed suggested letters to congressmen be prepared in the executive office of the Medical Society and sent to Auxiliary members for ideas.

Resolution No. 12—supported the Woman's Auxiliary request that *Today's Health* not be purchased for each teacher and professor in Kansas.

Resolution No. 13—recommended each hospital staff in Kansas appoint a Hospital Utilization Study Committee.

Resolution No. 14—recommended each component society explore variations of programs for providing the people within the area with adequate health insurance protection, such as has been performed in Leavenworth and Lyon Counties.

Resolution No. 15—approved Blue Cross-Blue Shield objectives for 1960, to increase membership for a net gain of 25,000, to upgrade coverage in Plan "B" memberships, and to effect economy.

Resolution No. 16—approved a state-wide survey of hearing among school children in Kansas.

Resolution No. 17—The By-Laws, Chapter XII, Section 16, shall be amended to read: Section 16. Physicians residing in counties where no component county society exists or residing in two or more adjoining counties in which the number of practicing physicians desiring affiliation with the Kansas Medical Society is too limited to assure successful and benefical meetings, may form joint county or district societies whose principles, constitution and by-laws are recognized and approved by the Council, and by virtue of such membership may be accepted as members of this Society.

Where component societies have already been chartered by the Council, original charters must be surrendered if so requested by a majority vote of the membership of said component society, or in case membership in a component society has dropped below the minimum membership (3) required by original Territorial Charter of the Kansas Medical Society, the Council shall revoke the original charter, urging the members to maintain society membership by merging with adjacent component society or multi-county component society. A new multi-county charter shall be granted after certification of individual membership by the proper officials of the component societies surrendering their charters. State Society dues or assessments shall be paid through the newly formed component society.

Resolution No. 18—*Be It Resolved* that the Committee on Constitution and Rules be authorized to correct the By-Laws where necessary to provide for the following:

- in the event of death, resignation or removal of the president-elect, the first vice-president shall assume that office and shall continue to serve during the presidential term for which his predecessor was elected,
- should vacancy occur in the office of president-elect, he shall assume that office and the second vice-president shall immediately advance to the office of first vice-president.

Resolution No. 19—The Committee on Emergency Medical Care shall be composed of seven or more members, at least one-half of whom including the chairman shall have served on the retiring committee. The function of this committee shall be to encourage and promote the formation of local or regional emergency care plans or organizations which would cooperate with and co-ordinate plans and organizations already formed in the state. In all cases cooperation with Red Cross, Civil Defense, Police departments, Public Health organizations, and all other Welfare groups necessary in an emergency is to be sought and utilized.

They shall meet at the call of the Chairman.

Resolution No. 20—*Be It Resolved* that the Committee on Public Policy and its duties be retained as they are described in the By-Laws, and

Be It Further Resolved that a new section be added to read: The Committee on Relations With the Bar shall consist of five or more members of the Society who shall function together with stated members or committee of the Bar Association in considering matters involving medical profession and the law. It may also consider and make recommendations on any medico-legal problems affecting individual members or the Society as a whole. At least one-half the members from this Society, including the chairman, shall have been members of the retiring committee. The members shall meet at the call of the chairman or the request of the Bar representative.

Resolution No. 21—The Committee on Medical Schools and Postgraduate Study shall be composed of at least seven members. It shall be the duty of this committee to secure all available data concerning the activities, progress and needs of the medical schools of this state, and to make annual report of the same to the House of Delegates. It shall also endeavor to establish and maintain a close relationship between the schools of medicine in this state and the Society, and shall remain in close contact with other univer-

sities or colleges in the state which offer pre-medical or basic science courses. It shall also further scientific activities of this Society such as refresher and post-graduate courses. Its aim and goal shall be continued advancement in medical knowledge for all physicians by means of programs and courses accessible to all and of approved value. At least one-half, including the chairman, shall have been members of the retiring committee. They shall meet at the call of the chairman.

Resolution No. 22—*Be It Resolved* that the Committee on Child Welfare and its functions be retained as listed in the By-Laws, and

Be It Further Resolved that a new section be added to read: The Committee on School Health shall consist of seven or more members of this Society, of whom at least one-half, including the chairman, shall have been members of the retiring committee. They shall meet at the call of the chairman. It shall be their function to study existing conditions, rules and regulations regarding the health, welfare, and instruction of students in the schools, universities, and private schools of the state, and to co-operate with teachers, faculties, boards of education, parent-teacher organizations, and public health associations to advise instruction designed to protect and improve the education and health of students from all angles, including the protection of mental defectives and protection against infection by prophylactic immunization and improper self medication.

Resolution No. 23—WHEREAS, There is a distinction on a philosophical level which must be recognized between a lay health organization, even though doctors of medicine dominate its policy, and a lay health organization with doctors dominating its policy but where the Kansas Medical Society as an entity feels itself in an advisory position, and,

WHEREAS, The Medical Society should not exert its control over funds or the expenditure of funds raised through public subscriptions for a lay health organization but should consult upon matters of professional activities. This item is suggested with full appreciation of the fact that physician members governing such lay health organizations are perfectly competent to act within the sphere of professional interest without the support of the Kansas Medical Society. Consultation with the Kansas Medical Society will result in a broader approval and cooperation of the individual practicing physician, and,

WHEREAS, The present situation appears as follows: The Kansas Medical Society has a Committee on the Control of Cancer, appointed annually in May by the president, which has no direct line of communication with any activities of the Kansas Division of the American Cancer Society. This committee has no budget of funds. The Kansas Division of the American Cancer Society has a Medical and Scientific Committee of which all members are members of the Kansas Medical Society. It has authority to appropriate money for projects within the limits of a budget authorized by the Board. Within this committee are three subcommittees, each consisting of four physician members. They are Professional Service Committee, Professional Education Committee, and Project Review Committee. Activities of these subcommittees are controlled by the above named larger committee.

Resolved, That the following working agreement with the Kansas Division of American Cancer Society be adopted:

1. Sufficient copies of the minutes of every meeting of the State Committee on Control of Cancer shall be given to the Kansas Division so each member of the Medical and Scientific Committee may receive them.

2. Sufficient copies of the Medical and Scientific Committee minutes of each of the three subcommittees of the Kansas Division shall be given to the Kansas Medical Society so each member of the State Committee on Control of Cancer may have them.

3. Except where the chairman feels an executive session is to be preferred, the executive secretary of the Kansas Division shall be invited to meetings of the Control of Cancer Committee, and an executive secretary of the Kansas Medical Society working with the Control of Cancer Committee, shall be invited to the meetings of the Medical and Scientific Committee.

4. The president of the Kansas Division of the American Cancer Society in October of each year shall appoint to the Medical and Scientific Committee three members of the Kansas Medical Society Committee on Control of Cancer.

5. The president of the Kansas Medical Society in May of each year shall appoint to the Committee on Control of Cancer three members for the Kansas Division's Medical and Scientific Committee. There shall be no regard or concern if these names overlap.

6. Before the first of November of each year, the Committee on Control of Cancer, at a regular meeting, shall elect from the membership of the Kansas Medical Society, whether these be members of the committee or not, two physicians who will serve as consultants on any of the subcommittees of the Medical and Scientific Committee of the Kansas Division of the American Cancer Society.

7. The Committee on Control of Cancer is invited to create projects and submit through the Medical and Scientific Committee request for appropriations of money with which the Committee on Control of Cancer may conduct such projects.

8. The Committee on Control of Cancer is requested to establish a set of standards for Cancer Pro-

grams, supervise, control and suggest budgets for such programs.

9. In general, the Kansas Division shall, without referring to the Committee on Control of Cancer, raise funds, conduct public education, and disburse funds, as approved by the Medical Scientific Committee.

10. Wherever the medical aspect enters, the Kansas Medical Society will be consulted by the Kansas Division of the American Cancer Society through the established channels.

Resolution No. 24—recommended each component society establish a standard basic disaster unit.

Resolution No. 25—authorized the Committee on Fee Schedule to continue its study on results of the survey of a few months ago and to report its findings and recommendations at the next meeting of the House of Delegates.

Resolution No. 26—recommended that a summary of committee meetings be published in the JOURNAL.

Resolution No. 27—authorized the Kansas Voluntary Hospital Advisory Commission to be expanded at the request of the Kansas Hospital Association to include an examination in areas outside professional services and that examination be conducted by the hospital members on the Commission.

Resolution No. 28—approved a policy for the Kansas Voluntary Hospital Advisory Commission that hospitals approved by the National Commission be approved by the Kansas Commission and that only hospitals ineligible for national approval be examined for subsequent approval upon their own request.

Resolution No. 29—authorized the Committee on Industrial Medicine to work with the Kansas Legislative Council toward the revision of the Workmen's Compensation Law.

Resolution No. 30—repetition of a motion to interest the Society in the field of education generally whether relating to health or not was adopted.

Resolution No. 31—authorized Membership Orientation Committee to prepare material for distribution to prospective members in Kansas acquainting them of facilities available to the practice of medicine in the care of patients.

Resolution No. 32—requested the Delegates from Kansas to the American Medical Association to recommend the pharmaceutical industry of the United States be approached in an effort to acquaint detailmen with the problem of federal medicine so they might advise physicians upon whom they call of the danger involved in certain types of federal legislation currently being considered by the Congress.

Resolution No. 33—recommend each county society to conduct a survey on problems and facilities for the aged population within the county.

Resolution No. 34—recommended each component society to utilize all possible public relations media for establishing better public relations.

Resolution No. 35—requested each component medical society to appoint at least one member to serve in a liaison capacity between the local society and the state committee on Public Relations.

Resolution No. 36—request the Committee on Constitution and Rules to determine whether it would be feasible to elect a councilor one full year prior to his term of office and that the Committee shall report at the next meeting of the House of Delegates.

Resolution No. 37—resolved that guest speakers at State Meetings would be authorized an honorarium in the future.

Resolution No. 38—approved the format for the Wichita meeting in 1961.

Resolution No. 39—this resolution introduced by the Wyandotte County Medical Society on the relationship of certain specialties with the hospitals was referred to the Committee on Public Policy for study and a preparation of a suitable resolution at the next session of the House of Delegates.

Resolution No. 40—resolved that the Kansas Medical Society does not favor the passage of a regulation by the State Board of Health requiring hospital and private laboratories to report the names of individuals having reactive serologies to the Board of Health. This information can only be properly given by the attending physician.

Resolution No. 41—resolved that invitations to attend future meetings of the Council of the Kansas Medical Society in position of auditors without vote would be sent to the dean of the University of Kansas School of Medicine or his representative, the president of Blue Shield or his representative, the secretary of the State Board of Health or his representative, all past presidents of the Society and a representative to be selected by the officers of each organized specialty group in Kansas.

Resolution No. 42—approved all minutes of the Executive Committee, the Council, the regular and special committees as amended by this body.

Resolution No. 43—approved the report of the Reference Committee.

Resolution No. 44—expressed the heart-felt thanks of the Society to the Reno County Medical Society and the Reno County Woman's Auxiliary for their planning, preparation and the conduct of a most wonderful meeting.

Resolution No. 45—gave an expression of gratitude to Dr. Henry S. Blake for his services to medicine through the Council on Medical Service.

Resolution No. 46—expressed thanks to the Hutchinson Chamber of Commerce for the many

(Continued on page 370)

Committees for 1960-1961

Allied Groups

W. M. Cole, Wellington, Chairman; J. J. Basham, Fort Scott; M. L. Belot, Jr., Lawrence; H. O. Bullock, Independence; A. R. Chambers, Iola; F. J. Eckdall, Emporia; F. B. Emery, Concordia; J. H. Gilbert, Seneca; D. A. Huebert, Wichita; J. B. Pretz, Kansas City; D. J. Smith, Overland Park; N. C. Smith, Arkansas City; M. O. Steffen, Great Bend.

Anesthesiology

Wray Enders, Kansas City, Chairman; H. J. Brown, Winfield; E. L. Frederickson, Kansas City; M. R. Knapp, Wichita; R. S. McKee, Leavenworth; W. O. Martin, Topeka; A. W. Mee, Wichita; W. F. Powers, Wichita; L. J. Ruzicka, Concordia; H. F. Spencer, Emporia; J. R. Sumner, Hutchinson; E. T. Wulff, Atchison.

Auxiliary

C. O. West, Kansas City, Chairman; H. L. Barry, Wichita; C. V. Black, Pratt; W. T. Braun, Pittsburg; V. E. Brown, Sabetha; J. G. Claypool, Howard; L. G. Glenn, Protection; L. G. Graves, St. John; E. M. Harms, Wichita; B. A. Nelson, Manhattan; R. E. Pfuetze, Topeka; H. A. Tretbar, Wichita; C. L. Young, Kansas City.

Blue Shield Relations

O. R. Cram, Jr., Larned, Chairman; P. L. Beiderwell, Belleville; F. J. Bice, Wakeeney; C. W. Bowen, Topeka; R. E. Capsey, Centralia; C. W. Erickson, Pittsburg; G. W. Fields, Scott City; W. H. Fritzemeier, Wichita; A. C. Hatcher, Wellington; P. E. Hiebert, Kansas City; H. P. Jones, Lawrence; W. R. Lentz, Seneca; J. L. Morgan, Emporia; J. R. Neuenschwander, Hoxie; H. R. Schmidt, Newton; B. G. Smith, Arkansas City; R. K. Wallace, Manhattan; E. R. Williams, Dodge City.

Child Welfare

R. L. Dreher, Salina, Chairman; M. J. Blood, Wichita; R. D. Boles, Dodge City; M. S. Boyden, Lawrence; W. H. Crouch, Topeka; D. R. Davis, Emporia; F. A. Gans, Salina; T. C. Hurst, Wichita; A. C. Irby, Fort Scott; G. F. Jordan, Jr., Wichita; H. P. Jubelt, Manhattan; W. F. McGuire, Wichita; E. A. Martin, Parsons; P. T. Schloesser, Topeka; R. N. Shears, Hutchinson; C. J. Winter, Jr., Kansas City; T. E. Young, Topeka.

Conservation of Eyesight

J. E. Hill, Arkansas City, Chairman; B. J. Ashley, Topeka; F. N. Bosilevac, Kansas City; E. J. Bribach, Atchison; L. L. Calkins, Kansas City; D. O. Howard, Wichita; M. S. Lake, Salina; D. T. Loy, Great Bend; H. E. Morgan, Newton; W. M. Scales, Hutchinson; E. T. Siler, Hays; D. P. Trimble, Emporia; D. D. Vermillion, Goodland.

Conservation of Hearing and Speech

J. A. Budetti, Wichita, Chairman; C. W. Armstrong, Salina; R. E. Bridwell, Topeka; H. R. Draemel, Salina; E. S. Gendel, Topeka; C. L. Gray, Wichita; W. P. McKnight, Wichita; E. E. Miller, Pittsburg; R. G. Montgomery-Short, Halstead; V. R. Moorman, Hutchinson; W. D. Pitman, Pratt; G. O. Proud, Kansas City; R. E. Riederer, Olathe; M. J. Ryan, Kansas City.

Constitution and Rules

A. W. Fegtly, Wichita, Chairman; R. E. Davis, Prairie Village; T. C. Ensey, Marion; A. C. Harms, Jr., Kansas City; Y. E. Parkhurst, Belle Plaine; A. S. Reece, Gardner; G. L. Thorpe, Wichita; M. M. Tinterow, Wichita; C. E. Vestle, Humboldt.

Control of Cancer

L. W. Reynolds, Hays, Chairman; J. P. Berger, Wichita; G. L. Campbell, Arkansas City; W. G. Cauble, Wichita; A. M. Cherner, Hays; L. K. Crumpacker, Wichita; J. C. Dysart, Sterling; A. A. Fink, Topeka; W. A. Grosjean, Winfield; H. L. Hiebert, Topeka; J. D. Hilliard, Medicine Lodge; W. J. Kiser, Wichita; J. R. Kline, Wichita; M. V. Laing, Kansas City; C. H. Miller, Parsons; N. C. Nash, Wichita; C. R. Openshaw, Hutchinson; D. C. Reed, Wichita; R. H. Riedel, Topeka; D. S. Ruhe, Kansas City; R. P. Schellinger, Emporia; P. H. Schraer, Concordia; B. E. Stofer, Wichita; G. M. Tice, Kansas City, L. E. Vinzant, Wichita; H. M. Wiley, Garden City; R. W. Wright, Jr., Kansas City.

Control of Tuberculosis

P. R. Carpenter, Kansas City, Chairman; A. L. Ashmore, Wichita; A. Baude, Topeka; R. M. Brooker, Topeka; J. A. Butin, Chanute; R. I. Canuteson, Lawrence; L. H. Coale, Kansas City; R. F. Conard, Emporia; M. J. FitzPatrick, Kansas City; J. K. Fulton, Wichita; R. A. Lawson, Chanute; J. L. Morgan, Emporia; J. M. Mott, Topeka; G. W. Nice, Topeka; C. Pokorny, Halstead; J. W. Spearing, Columbus; C. F. Taylor, Norton; F. A. Trump, Ottawa; P. H. Wedin, Wichita.

Emergency Medical Care

F. C. Beelman, Topeka, Chairman; G. L. Ashley, Chanute; K. F. Bascom, Manhattan; R. W. Blackburn, Council Grove; F. L. Brochu, Kansas City; G. L. Gill, Sterling; L. F. Glaser, Hutchinson; A. J. Horejsi, Ellsworth; C. C. Hunnicutt, Sabetha; H. H. Hyndman, Wichita; N. M. Jenkins, Salina; D. S. Klassen, Newton; G. E. Manahan, Lawrence; O. F. Prochazka, Liberal; R. E. Speirs, Dodge City; J. F. Thurlow, Hays; D. P. Trees, Wichita.

Endowment

C. V. Black, Pratt, Chairman; R. A. Nelson, Wichita; R. J. Ohman, Dodge City; J. L. Perkins,

Hutchinson; J. W. Randell, Marysville; R. Schrepfer, Kansas City; F. L. Smith, Jr., Colby; C. C. Underwood, Emporia.

Executive

F. E. Wrightman, Sabetha, president; H. M. Glover, Newton, president-elect; G. R. Peters, Kansas City, past-president; N. L. Francis, Wichita, first vice-president; H. St. C. O'Donnell, Ellsworth, 2nd vice-president; J. L. Lattimore, Topeka, treasurer; G. E. Burket, Jr., Kingman, secretary.

Fee Schedule

W. J. Reals, Wichita, Chairman, Pathology; W. R. Allen, Kansas City, Radiology; H. J. Brown, Winfield, Anesthesiology; J. G. Claypool, Howard, Internal Medicine; G. W. Fields, Scott City, General Practice; W. H. Fritzemeier, Wichita, Dermatology; L. W. Hatton, Salina, Psychiatry; J. E. Hill, Arkansas City, Ophthalmology; T. C. Hurst, Wichita, Pediatrics; G. B. Joyce, Topeka, Orthopedics; J. G. Kendrick, Wichita, Obstetrics and Gynecology; W. R. Lentz, Seneca, General Practice; W. P. McKnight, Wichita, ENT; P. W. Morgan, Emporia, Internal Medicine; C. R. Openshaw, Hutchinson, Thoracic Surgery; J. E. Roderick, Salina, Urology; S. L. Vander Velde, Emporia, Surgery.

General Practice Award

W. R. Lentz, Seneca, Chairman; C. W. Bowen, Topeka; F. E. Dillenbeck, El Dorado; L. E. Leigh, Overland Park; B. P. Meeker, Wichita; G. P. Neighbor, Kansas City; C. A. Newman, Topeka; A. K. Ratzlaff, Goessel; S. Zweifel, Kingman.

Gerontology

P. W. Thompson, Topeka, Chairman; J. O. Austin, Garden City; L. J. Beyer, Lyons; J. M. Catlett, Emporia; T. Dechairo, Westmoreland; D. M. Diefendorf, Waterville; G. M. Edmonds, Horton; H. A. Flanders, Hays; V. L. Jackson, Altamont; J. T. Hamilton, Wichita; A. G. Isaac, Newton; R. McCoy, Coldwater; K. McLain Ransom; J. J. Marchbanks, Oakley; R. F. Morton, Arkansas City; T. V. Oltman, Riley; J. W. Parker, Burlington; D. V. Preheim, Newton; E. S. Rich, Newton; D. L. Rose, Kansas City; H. L. Songer, Lincoln; C. E. Stevenson, Neodesha; G. A. Surface, Ellis.

History

R. R. Melton, Marion, Chairman; J. F. Barr, Ottawa; H. C. Clark, Wichita; A. W. Corbett, Emporia; O. W. Davidson, Kansas City; R. D. Grayson, Overland Park; J. G. Hughbanks, Independence; I. A. Koeneke, Halstead; R. H. Major, Kansas City; H. P. Palmer, Scott City; R. A. Schwegler, Lawrence; G. S. Voorhees, Leavenworth.

Hospitals

C. C. Hunnicutt, Sabetha, Chairman; G. B. Athy, Columbus; H. G. Bayles, Fredonia; W. M. Campion, Liberal; M. D. Christensen, Kiowa; J. D. Colt, Manhattan; M. C. Eddy, Hays; D. L. Evans, Manhattan; F. R. Frink, Lawrence; E. R. Gelvin, Concordia; E. T. Gertson, Atwood; J. L. Grove, Newton; G. F. Gsell, Wichita; R. H. Hill, Meade; G. H. Keene, Wichita; D. B. Parker, Ness City; A. J. Rettenmaier, Kansas City; H. B. Russell, Great Bend; C. D. Snyder, Winfield; E. B. Struxness, Hutchinson; R. E. White, Garnett.

Industrial Medicine

E. C. Sifers, Kansas City, Chairman; V. D. Alquist, Baxter Springs; W. L. Anderson, Atchison; J. A. Budetti, Wichita; A. S. J. Clarke, Prairie Village; C. L. Francisco, Kansas City; W. L. Good, Mission; G. S. Hopkins, Topeka; J. J. Hovorka, Emporia; C. A. Isaac, Newton; J. F. Lance, Jr., Wichita; C. M. Lessenden, Topeka; F. L. Loveland, Topeka; R. H. Moore, Lansing; F. A. Moorhead, Neodesha; A. R. Mueller, Leavenworth; P. C. Nohe, Kansas City; W. F. Powers, Wichita; H. L. Regier, Kansas City; R. W. Urie, Parsons; C. L. White, Great Bend.

Legislation

H. M. Glover, Newton, Chairman; (Executive Committee plus A.M.A. Delegates).

Maternal Welfare

H. M. Floersch, Kansas City, Chairman; A. H. Baum, Dodge City; R. M. Carr, Junction City; E. X. Crowley, Wichita; H. R. Elliott, Pittsburg; H. M. Foster, Hays; E. S. Gendel, Topeka; D. E. Gray, Topeka; R. G. Heasty, Manhattan; J. G. Kendrick, Wichita; J. G. Lee, Jr., Kansas City; E. A. Martin, Parsons; O. L. Martin, Salina; M. D. Morris, Topeka; W. R. Roy, Topeka; C. E. Shrader, Newton; R. Sohlberg, Jr., McPherson; J. C. Schroll, Hutchinson; E. F. Steichen, Lenora; T. F. Taylor, Phillipsburg; D. L. Traylor, Emporia; H. L. Wilcox, Lawrence; D. H. Wood, Pittsburg; L. E. Woodard, Wichita.

Medical Assistants

K. J. Gleason, Independence, Chairman; W. M. Campion, Liberal; J. R. Cooper, Kansas City; M. C. Eddy, Hays; T. D. Ewing, Larned; H. L. Hiebert, Topeka; C. A. Isaac, Newton; D. L. Marchbanks, Hill City; L. F. Schmaus, Iola.

Medical Economics

J. A. McClure, Topeka, Chairman; P. D. Adams, Osage City; J. N. Blank, Hutchinson; H. L. Bogan, Baxter Springs; K. L. Graham, Leavenworth; J. K. Griffith, Winfield; G. E. Kassebaum, El Dorado; M. B. Miller, Topeka; B. A. Nelson, Manhattan; L. S. Nelson, Jr., Salina; E. B. Scagnelli, Dodge City; F. G. Schenck, Burlingame; R. C. Stanley, Kansas City; C. H. Steele, Kansas City; G. C. Steinberger, Abilene; W. K. Walker, Sedan.

Medical Schools

N. L. Francis, Wichita, Chairman; R. G. Ball, Manhattan; O. W. Davidson, Kansas City; M. C. Eddy, Hays; R. W. Fernie, Hutchinson; D. B. Foster, Topeka; L. F. Glaser, Hutchinson; L. G. Glenn, Protection; H. P. Jones, Lawrence; L. C. Joslin, Harper; D. Lu-

kens, Hutchinson; L. F. McKee, Cottonwood Falls; D. Marchbanks, Hill City; B. M. Matassarin, Wichita; J. C. Mitchell, Salina; P. W. Morgan, Emporia; J. G. Phipps, Wichita; M. Snyder, Salina; Leland Speer, Kansas City; N. V. Treger, Topeka; J. R. Twinem, Olathe; W. H. Walker, Eskridge; I. J. Waxse, Oswego.

Medicare

Kansas City Area: J. W. Manley, Kansas City, Chairman; D. L. Berger, Mission; K. L. Graham, Leavenworth; J. G. Lee, Jr., Kansas City; G. J. Pierron, Olathe.

Manhattan Area: C. J. W. Wilen, Manhattan, Chairman; J. D. Colt, Jr., Manhattan; P. H. Hostetter, Manhattan.

Salina Area: L. S. Nelson, Sr., Salina, Chairman; D. A. Anderson, Salina; R. L. Dreher, Salina; N. M. Jenkins, Salina.

Topeka Area: G. B. Joyce, Topeka, Chairman; L. R. Pyle, Topeka; L. L. Saylor, Topeka.

Wichita Area: C. W. Miller, Wichita, Chairman; H. S. Bowman, Wichita; J. G. Kendrick, Wichita; B. P. Meeker, Wichita.

Membership Orientation

K. L. Garham, Leavenworth, Chairman; J. O. Baeke, Overland Park; E. S. Brinton, Wichita; G. W. Cramer, Parsons; J. H. McNickle, Ashland; R. H. O'Donnell, Ellsworth; R. H. O'Neil, Topeka.

Mental Health

F. C. Newson, Wichita, Chairman; A. J. Adams, Wichita; H. V. Bair, Parsons; A. P. Bay, Topeka; E. P. Carreau, Wichita; I. C. Case, Topeka; O. R. Cram, Jr., Larned; H. E. Dittemore, Liberal; J. A. Dunagin, Topeka; D. Greaves, Kansas City; J. A. Grimshaw, Topeka; L. W. Hatton, Salina; J. C. Hirschberg, Topeka; G. W. Jackson, Topeka; H. Lazar, Wichita; J. S. Menaker, Wichita; T. F. Morrow, Wichita; D. M. Rosenbaum, Newton; W. F. Roth, Jr., Kansas City; W. C. Schwartz, Manhattan; R. E. Switzer, Topeka; P. W. Thompson, Topeka; D. R. Wall, Wichita; W. A. Warren, Wichita; H. G. Whittington, Lawrence; M. E. Wright, Lawrence.

Necrology

O. R. Clark, Topeka, Chairman; D. E. Gray, Topeka; R. Greer, Topeka; D. Lawson, Topeka; J. A. Segerson, Topeka.

Nominations

T. P. Butcher, Emporia, Chairman; O. W. Davidson, Kansas City; M. C. Eddy, Hays; B. A. Nelson, Manhattan; L. S. Nelson, Sr., Salina.

Pathology

C. J. Weber, Salina, Chairman; R. J. Eilers, Kansas City; A. A. Fink, Topeka; C. A. Hellwig, Halstead; I. Joffe, Kansas City; W. E. Luedtke, Emporia; W. J. Reals, Wichita.

Perinatal Welfare

W. H. Crouch, Topeka, Chairman; R. D. Boles, Dodge City; V. E. Bolton, Kansas City; M. D. Christensen, Kiowa; J. M. Graham, Leavenworth; G. F. Jordan, Jr., Wichita; H. P. Jubelt, Manhattan; R. C. Knappenberger, Wichita; O. L. Martin, Salina; R. E. Pfuetze, Topeka; L. R. Pyle, Topeka; P. T. Schloesser, Topeka; R. N. Shears, Hutchinson; T. E. Young, Topeka.

Postgraduate Study

W. H. Algie, Kansas City, Chairman; G. E. Burket, Jr., Kingman; M. H. Delp, Kansas City; D. B. Foster, Topeka; S. R. Friesen, Kansas City; T. W. Graham, Leavenworth; G. C. Hutchison, Hays; D. Lawson, Topeka; D. Lukens, Hutchinson; E. L. Mills, Wichita; E. J. Ryan, Emporia.

Public Policy

G. R. Peters, Kansas City, Chairman; C. M. Barnes, Seneca; C. H. Benage, Pittsburg; W. F. Bernstorf, Winfield; T. P. Butcher, Emporia; W. P. Callahan, Wichita; O. W. Davidson, Kansas City; M. C. Eddy, Hays; E. S. Edgerton, Wichita; J. L. Lattimore, Topeka; F. L. Loveland, Topeka; N. E. Melencamp, Dodge City; C. W. Miller, Wichita; B. A. Nelson, Manhattan; L. S. Nelson, Sr., Salina; J. H. A. Peck, St. Francis; L. R. Pyle, Topeka; H. N. Tihen, Wichita.

Public Relations

L. S. Nelson, Sr., Salina, Chairman; S. A. Anderson, Clay Center; C. H. Benage, Pittsburg; T. P. Butcher, Emporia; E. W. Crow, Wichita; A. H. Dyck, McPherson; J. L. Lattimore, Topeka; J. W. Manley, Kansas City; G. Marshall, Colby; C. W. Miller, Wichita; L. W. Patzkowsky, Kiowa; J. R. Twinem, Olathe.

Relations With Bar Association

C. S. Joss, Topeka, Chairman; L. G. Allen, Jr., Kansas City; C. H. Benage, Pittsburg; T. R. Hamilton, Kansas City; J. B. Jarrott, Hutchinson; C. R. Rombold, Wichita; E. J. Ryan, Emporia; J. A. Segerson, Topeka; K. E. Voldeng, Wellington.

Rural Health

C. R. Svoboda, Chapman, Chairman; P. D. Adams, Osage City; V. E. Brown, Sabetha; J. G. Claypool, Howard; F. G. Freeman, Pratt; M. F. Frederick, Hugoton; R. E. Grene, La Crosse; H. W. Hiesterman, Quinter; P. H. Hostetter, Manhattan; R. L. Krause, Goessel; E. E. Long, Humboldt; R. P. McCarthy, Kansas City; D. Marchbanks, Hill City; L. W. Patzkowsky, Kiowa; D. R. Pierce, Topeka; J. G. Rowlett, Paola; J. Scanlon, Horton; M. E. Schulz, Russell; R. R. Snook, McLouth; E. F. Steichen, Lenora; M. H. Waldorf, Jr., Greensburg; H. O. Williams, Cheney; D. H. Wood, Pittsburg; E. D. Yoder, Denton.

Safety

A. L. Nichols, Hiawatha, Chairman; T. G. Duckett, Hiawatha; A. C. Eitzen, Hillsboro; J. A. Grove, Newton;

A. E. Hiebert, Wichita; J. E. Hill, Arkansas City; C. T. McCoy, Hutchinson; J. H. A. Peck, St. Francis; R. R. Snook, McLouth; H. E. Snyder, Winfield; H. B. Sullivan, Jr., Shawnee; R. P. Weltmer, Beloit; R. C. Ye, Kansas City.

School Health

C. M. Barnes, Seneca, Chairman; M. D. Athon, Overland Park; W. F. Bernstorf, Winfield; V. Branson, Lawrence; J. A. Butin, Chanute; W. H. Crouch, Topeka; E. S. Gendel, Topeka; E. D. Greenwood, Topeka; R. Greer, Topeka; Ralph Hale, Wichita; H. P. Jubelt, Manhattan; M. S. Lake, Salina; H. Lutz, Augusta; W. C. Menninger, Topeka; R. A. Moon, Prairie Village; W. E. Myers, Iola; R. A. Nelson, Wichita; R. R. Snook, McLouth; H. R. Wagenblast, Salina.

State Meeting Format

H. M. Glover, Newton, Chairman; W. J. Justus, Pleasanton; L. H. Leger, Kansas City; J. L. Perkins, Hutchinson; R. K. Purves, Wichita; E. J. Ryan, Emporia; R. C. Tozer, Topeka.

Stormont Medical Library

B. M. Powell, II, Topeka, Chairman; W. L. Fowler, Concordia; W. E. Hird, Wichita; N. M. Jenkins, Salina; R. Lawson, Topeka; G. A. Lessenden, Lawrence; D. S. Lowe, Hiawatha; M. F. Stock, Pittsburg; R. G. Weiner, Halstead; R. P. Woods, Topeka.

Study of Heart Disease

L. F. Schmaus, Iola, Chairman; M. S. Allen, Kansas City; D. R. Bedford, Topeka; J. W. Butin, Wichita; E. W. Crow, Wichita; C. W. Erickson, Pittsburg; L. H. Leger, Kansas City; D. Lukens, Hutchinson; P. W. Mogan, Emporia; R. F. Morton, Arkansas City; G. L. Norris, Winfield; L. E. Peckenschneider, Halstead; H. B. Stryker, Jr., Concordia; D. C. Wakeman, Topeka; C. J. W. Wilen, Manhattan.

Official Proceedings

(Continued from page 366)

services rendered physicians during their stay in that city.

The new councilor, elected by caucus of the delegates from each of the involved districts, was then announced:

District No. 1—re-elected E. D. Yoder, M.D., Denton
District No. 3—re-elected G. R. Maser, M.D., Mission
District No. 5—re-elected Ralph G. Ball, M.D., Manhattan
District No. 8—elected J. G. Claypool, M.D., Howard
District No. 9—elected J. C. Mitchell, M.D., Salina
District No. 17—elected J. O. Austin, M.D., Garden City.

Doctor Peters then presented the gavel to Dr. F. E. Wrightman, new president, who adjourned the House of Delegates meeting at 3:45 P.M.

Many Hands

Many hands and many skills—that's what it takes to operate a hospital and to care for the nearly 24 million Americans who annually enter hospitals. One and a half million persons work in hospitals.

According to the American Hospital Association more people are receiving hospital care than ever before, more persons are needed to care for them, and more money is spent for patient care.

Since 1946, annual admissions in all hospitals have increased over 50 per cent; the number of employees has increased more than 75 per cent; and total expenditures have increased from just under $2 billion to more than $7 billion.

More people are entering hospitals now than ever before because more are going to physicians, and physicians are caring for many of these patients in the hospital—where equipment, supplies, and trained teams of workers are centered to aid in diagnosis and treatment and to speed recovery.

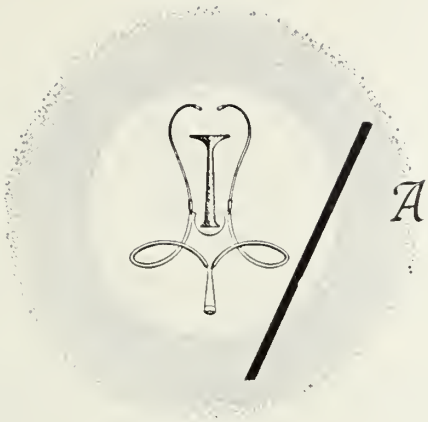
There is now an average of 2.2 hospital employees for each patient treated in a general hospital, compared with 1.5 in 1946. Nearly two-thirds of these employees work in the professional service departments, such as nursing service, operating and delivery rooms, x-ray, laboratories, and pharmacy. The others work in the operation and maintenance, food service, and administrative areas.

The number of hospital services grow steadily as medical progress moves forward. In fact, new services and expansions of existing services have come too fast for the data-gatherers, according to the Association. Nearly all hospitals report having diagnostic x-ray, clinical laboratory, electrocardiograph, outpatient department, medical records department, medical library, and blood bank. But others also report such services as dental departments, intensive care unit, electroencephalograph, basal metabolism, physical and occupational therapy, and many others.

All of these additional services with their necessary equipment and staff have affected costs. While inflation is also a factor in rising hospital costs, the major factor is increased payroll. The higher payroll results from the increased number of personnel, the increased skills of the personnel, and improved personnel policies such as shortened workweek, higher salary levels, and health and retirement benefits.

Payrolls accounts for two-thirds of total hospital costs, compared to one-third for industry. But unlike industry, the hospital must be ready to function 24 hours a day, 365 days a year. And the hospital cannot automate, except behind the scenes. Direct patient care is a personal service, to meet the individual human need.

Emotion has taught mankind to reason.—*Vauvenargues*



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. *Notice of the session is posted in advance to allow the physician time to make preparations.*

The American College of Gastroenterology announces that its Annual Course in Postgraduate Gastroenterolgy will be given at the Bellevue-Stratford Hotel in Philadelphia, Pa., on 27, 28, 29 October 1960.

The faculty for the course will be drawn from the medical schools in and around Philadelphia. The subject matter to be covered in the course, from a medical as well as surgical viewpoint, will be essentially, the advances in diagnosis and treatment of gastrointestinal diseases and a comprehensive discussion of diseases of the mouth, esophagus, stomach, pancreas, spleen, liver and gallbladder, colon and rectum. There will be a clinical session at the Albert Einstein Medical Center and again this year, in addition to individual papers, there will be panel discussions and CPC's of interest.

For further information and enrollment write to the American College of Gastroenterolgy, 33 West 60th Street, New York 23, N. Y.

Application forms for space in the Scientific Exhibit at the Washington, D. C. Clinical Meeting of the American Medical Association, November 28 to December 1 are now available. They may be procured by writing directly to Charles H. Bramlitt, M.D., Director, Department of Scientific Assembly, American Medical Association, 535 N. Dearborn St., Chicago 10, Illinois. Applications close on August 1.

The "Hull" award will be presented for the first time at this meeting to the best exhibit on a scientific subject which has not been previously shown at a medical meeting. The award will consist of a gold medal and an honorarium of $250. The winning exhibit will be approved for showing in the Scientific Exhibit at the 1961 Annual Meeting of the AMA which will be held in New York City.

Dr. Thomas G. Hull will personally present the award to the recipient.

The Department of Otolaryngology, University of Illinois College of Medicine, will conduct a postgraduate course in Laryngology and Bronchoesophagology from October 17 through October 29, 1960, under the direction of Paul H. Holinger, M.D.

Registration will be limited to 15 physicians who will receive instruction by means of animal demonstrations and practice in bronchoscopy and esophagoscopy, diagnostic and surgical clinics, as well as didactic lectures.

Interested registrants will please write directly to the Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12, Illinois.

Applications for certification in the American Board of Obstetrics and Gynecology, new and reopened, Part I, and requests for re-examination in Part II are now being accepted. All candidates are urged to make such application at the earliest possible date. Deadline for receipt of applications is August 1, 1960. No applications can be accepted after that date.

Candidates are requested to write to the office of the Secretary for a current Bulletin if they have not done so in order that they might be well informed as to the present requirements. Application fee ($35.00), photographs, and lists of hospital admissions must accompany all applications.

As announced in the current Bulletin, "after July 1, 1962, this Board will require a minimum of three (3) years of approved progressive Residency Training to fulfill the requirements for admission to ex-

amination. After the above date, training by Preceptorship will no longer be acceptable. Therefore the initiation of Preceptorships will not be approved after July 1, 1960."

Write for further information: Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

The Eighth Congress of the Pan-Pacific Surgical Association will be held in Honolulu, Hawaii, September 27 through October 5 in 1960.

All members of the profession are eligible to register and are urged to make arrangements as soon as possible if they wish to be assured of adequate facilities because of limited space.

An outstanding scientific program by leading surgeons promises to be of interest to all doctors. Ten surgical specialty sections are held simultaneously.

Further information and brochures may be obtained by writing to Dr. F. J. Pinkerton, Director General of the Pan-Pacific Surgical Association, Suite 230, Alexander Young Building, Honolulu 13, Hawaii.

Executive 'Tension Illnesses' Myth Exploded

Are executives more prone to certain illnesses than nonexecutives? Contrary to popular belief, executives do not have a higher incidence of heart conditions or tension disorders than other employees with less responsibility. In fact, one study of close to 1,400 employees showed a slightly lower incidence of such conditions as hypertension, arteriosclerosis, and myocardial infarction among executives than nonexecutives. In another study analyzing the prevalence of some 16 medical conditions, only two conditions ranked significantly higher among executives. They were arthritis and rheumatism and "back" cases (both twice as high). On the other hand, hernias occurred almost three times as frequently among nonexecutives.

Possibly executives are healthier than other workers to start with, or have means of releasing tensions, or take better care of themselves than other workers.

However, the popular notion of women as the "weaker sex"—in terms of their work record in industry—is upheld in the publication. It points out that over the past 10 years the number of women employed has increased by 50 per cent, to the point where there are now 22,000,000 women workers—one third of our working force. Of these, 9,000,000 are married, while 1,000,000 or more are heads of families with no employed relatives.

Heart disease affects workers in the most productive years when their skill and experience are of greatest use to industry. Yet, despite advances in rehabilitating heart disease sufferers, there is evidence that this condition may seriously hamper their employment possibilities.

A survey of industries in Minnesota showed that nearly 60 per cent of companies seldom or never hire persons with known heart disease and about three per cent require cardiac employees to seek work elsewhere. Cited as a "large factor in reluctance of employers to hire cardiac patients is Workmen's Compensation or group insurance and sick-leave liability claims."

A new health problem resulting from this increase is absenteeism among women workers. In one company, for instance, women constituted only slightly more than 25 per cent of the working force, yet were responsible for 49 per cent of disability cases, 63 per cent of weeks lost from work, and 95 per cent of excess lost time cases. "Most excessive absenteeism was among married women 50 to 20 years old and season of greatest absenteeism was summer—when children were on vacation from school!"

Posed as another major medical problem in industry is that confronting employees stricken with our No. 1 disease—heart disease.

More and more, however, cardiac patients can and do return to work—thanks to an intensified program of "rehabilitation, vocational guidance, and selective placement." In the same Minnesota survey, about two-thirds of patients surviving attacks returned to their former place of employment, and about one-half of these to their former job.

There were 900 more deaths and more than 50,000 additional injuries on U. S. highways in 1959 than was the case in 1958.

Fatalities climbed to 37,600 and more than 2,870,000 were injured as a result of automobile accidents.

A report has stated that more than 62,000,000 men, women, and children have been killed or injured by automobiles since they first appeared on the scene. More have died on the highways than on our nation's battlefields. More have been injured than in all the world's wars combined.

By far the single biggest cause of accidents resulting in death or injury was speed. More than 43.1 per cent of the deaths and 38.8 per cent of the injuries were blamed on speed. Second biggest killer was the driver on the wrong side of the road who was blamed for 15.9 per cent of the deaths.

Although making up less than 14 per cent of the driving population, drivers under 25 years of age were involved in nearly 29 per cent of the fatal accidents. There were 13,140 young drivers under 25 involved in fatal accidents during the year—2,010 were under age 18.

Personalities—IN KANSAS MEDICINE

Dr. Darwin L. Richardson has announced that he has leased the Minneola Clinic to Dr. Charles G. Stephens, which was effective May 1.

Dr. Richardson and his family came to Minneola in 1951 and established a medical practice in the new clinic building that had been built by the people of the community. Dr. Richardson leaves the community to establish a new clinic and hospital at DeLeon, Texas.

Dr. C. J. Cavanaugh, Great Bend radiologist, addressed the Kansas Society of X-ray Technicians in convention at the Silver Spur motel in Dodge City, April 29 and 30. His subject was "Gall Bladder Techniques," a part of the scientific program.

Gov. George Docking recently appointed **Dr. A. A. Fink,** Topeka, to the Kansas State Board of Health. Dr. Fink replaces **Dr. T. E. Young,** Topeka, who had resigned.

The governor reappointed three other members to the board—W. E. Fraese, Hutchinson; Dr. A. M. Herman, Hays, and **Dr. Richard Nelson,** Lawrence. All will serve three-year terms.

Dr. Colby Herbert Munger, 79, Emporia, Director of the Lyon County Health Unit for the past 28 years, was an honored guest at the convention of the Kansas Public Health Association in Wichita. Special recognition was given at a convention dinner to Dr. Munger for meritorious service in the interest of public health.

Dr. Munger has headed the Lyon County Health Unit since 1932. It has the record of being the oldest continuously operated county health unit in Kansas, and did outstanding work in the mid-1950's in administering the Salk vaccine for polio immunization.

Dr. Roy A. Lawson, superintendent, Southeast Kansas Tuberculosis Hospital, attended the annual meeting of the National Tuberculosis Association in Los Angeles, May 16-20.

Tuberculosis and other respiratory diseases, which constitute the major cause of loss of time from work and school in the United States today, were the focus of attention at the meeting.

Drs. A. W. Fegtly, Clyde W. Miller, and **George L. Thorpe** were among those attending the American Academy of General Practice meeting in Philadelphia, March 21-24.

A special citation for contributions to education has been awarded **Dr. L. B. Spake** by the speech and drama department of University of Kansas.

The award was made at the annual honors banquet of the department in Lawrence.

Dr. Spake was honored for establishing the speech and hearing laboratory at University of Kansas Medical Center here at his own expense 13 years ago. The teaching department he founded now offers the Ph.D. degree.

Dr. John L. Lattimore, Topeka, addressed a joint dinner meeting of the Community Memorial Hospital medical staff and the board of trustees in Marysville.

The dinner was in observance of National Hospital Week. Dr. Lattimore's subject was "Medico-Legal Medicine."

Dr. P. J. O'Connell, Kansas City, was honored recently at a mass and reception celebrating his 50th year as a practicing physician at St. Mary's hospital, Kansas City, Mo.

Staff members and other physicians attended the

NEW MEMBERS

The JOURNAL *takes this opportunity to welcome these new members into the Kansas Medical Society.*

Donald C. Coldsmith, M.D.
1024 West 12th
Emporia, Kansas

Peter D. Fleming, M.D.
Menninger Foundation
Topeka, Kansas

Richard A. Gruendel, M.D.
1808 N. 49th
Kansas City, Kansas

Frederick H. Hartwig, M.D.
701 E. 63rd
Kansas City, Missouri

Robert W. Hughes, M.D.
1610 W. 22nd Terrace
Lawrence, Kansas

Eugene C. Hwa, M.D.
St. Francis Hospital
Wichita, Kansas

Robert H. Kurth, M.D.
4508 W. 74th Terrace
Prairie Village, Kansas

Frank J. Kutilek, M.D.
8927 W. Central
Wichita 12, Kansas

Hans Lettner, M.D.
Hutchinson, Kansas

George J. Mastio, M.D.
959 N. Emporia
Wichita 14, Kansas

Herbert C. Medlin, M.D.
Menninger Foundation
Topeka, Kansas

Donald C. Rorabaugh, M.D.
417 N.W. Third
Abilene, Kansas

John W. Schmaus, M.D.
St. Francis Hospital
Wichita 14, Kansas

mass and reception at the hospital. Dr. O'Connell has been a member of the St. Mary's staff since 1909, one year before he was graduated from medical school. He is a general practitioner.

An abstract of the article "Cardiac Resuscitation" by **Drs. Alfred M. Tocker, Van S. Parmley, Agustin Arbulu, H. M. Holladay** and Irene Gleichman, R.N. (which appeared in the October and November 1959 issues of the JOURNAL) was published in the May 1960 issue of *The International Surgical Digest* (Vol. 69, No. 5, pp. 263-265).

Dr. Tocker presented the following paper before the Twelfth Annual Meeting of the Southwestern Surgical Congress in Las Vegas, Nevada on March 28, 1960: "Selective Pulmonary High Carcinolytic Agent Concentration in Treatment of Bronchogenic Carcinoma." It was prepared by Drs. Alfred M. Tocker, **David Givner, William J. Reals;** L. E. Dietrich, Jr., D.V.M.; and Charles Schnitzler, D.V.M.

Dr. Donald L. Cooper, physician at Kansas State University's student health service, has been named director of student health at Oklahoma State University, effective July 1.

A 1953 graduate of the Kansas University Medical School, Dr. Cooper was in private practice at Ft. Scott before he entered the Air Force for two years. He was in private practice at Manhattan for a year before joining the K-State staff in 1957.

Dr. Cooper has served as team physician at K-State and he will be team physician at Stillwater.

Increased support for influenza research to permit investigators to take advantage of the study opportunities afforded by the current influenza outbreaks has been announced by Surgeon General Leroy E. Burney of the Public Health Service.

Methods to stimulate research during the current influenza season and to encourage long-range research in influenza and related diseases were developed when Dr. Burney called together the Service's Committee of Investigators which is composed of some of the Nation's leading authorities on influenza and related diseases. The meeting was held at the National Institutes of Health.

Members of the Committee agreed to accelerate their own research during this influenza season and to encourage other investigators to conduct influenza studies. All influenza research projects will receive special review at the National Institutes of Health, and qualified projects will be approved rapidly.

Types of problems cited by the Committee as needing study are:

a. Assessment of the value of vaccine given in the 1957 epidemic as to its possible degree of protection at the present time;

b. The present degree of immunity of unvaccinated individuals who had influenza in the 1957 epidemic;

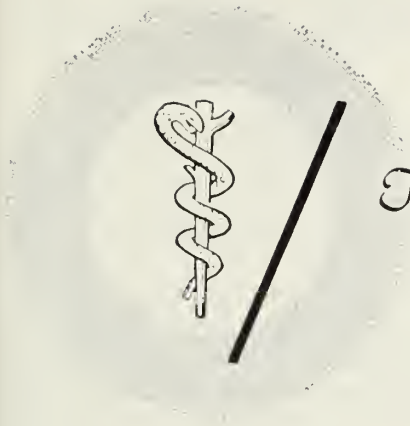
c. The physiological effects of influenza on cardiovascular and respiratory systems;

d. The neuromuscular effects of influenza.

Investigators who participated in studies during the 1957 epidemic have been alerted to the accelerated project review and approval mechanism.

The Committee of Investigators was established on the recommendation of the Surgeon General's Advisory Committee on Influenza Research. The Influenza Research Committee continued to function after the Asian Influenza Epidemic of 1957. It stressed that one of the major problems of influenza research is to maintain a competent corps of investigators with a continuing interest in research in this disease between epidemic periods. A plan for a Committee of Investigators with continuing interest in influenza research was approved by the Councils of the National Institutes of Health and by the Surgeon General in the fall of 1959.

He has a hard heart who does not love in May.—*Guillaume de Lorris*



The Kansas Press Looks at Medicine

Editor's Note. In this section the JOURNAL *reproduces editorials relating to medicine which have appeared in the lay press. An effort is made to include both favorable and unfavorable comments, and the Editorial Board in no instance assumes responsibility for the opinions expressed.*

School Speeds Up on Doctors

Northwestern University's medical school, now 100 years old, has decided upon a new curriculum for the school year beginning in 1961. Medical training will be streamlined, reducing to six years the time it takes between high school graduation and the award of an M.D. degree. The time formerly has been seven to eight years.

Granting that this will be at no loss of knowledge and skills acquired by the future doctor during his school career, it sounds like a part of the answer to the call for a faster production of doctors.

Population projections, compared with the rate of medical school graduations, have been suggesting that the country presently will be short of enough doctors to tend the sick. More and bigger medical schools have been suggested along with relaxation of present rules about admitting foreign trained doctors to American practice.

The Northwestern idea of graduating doctors one or two years ahead of the present time will make a contribution to the need. Whether it will be enough of a contribution is doubtful.—*Wichita Eagle,* April 19, 1960.

Until the Doctor Comes

A recent news story in *The Daily Capital* reported Valley Falls (Pop. 1,165) is a town without a doctor. Its mayor expressed the opinion that the town has lost doctors because "we didn't provide them with a nice well-equipped office."

Valley Falls' problem of obtaining and keeping a general practitioner is one that is faced by many of our smaller towns. This situation is recognized by various groups, including our own University of Kansas School of Medicine which encourages some of its graduates to settle in smaller communities. Farm organizations also have been trying to channel doctors to small towns with loans and other incentives.

Many young doctors, however, choose metropolitan areas or medium-sized cities for various reasons. They want to specialize, to be near hospital facilities and laboratories, where other doctors are present to help carry the night-call load and for consultation.

The scope of the problem of getting medical talent to small communities is evidenced by the fact that in the year ended last June 30, the Physician Placement Service of the American Medical Assn. received requests from 976 towns of under 1,000 population for assistance in finding physicians.—*Topeka Daily Capital.* May 7, 1960.

Of Doctors and the Press

BY TED BLANKENSHIP

I had the good fortune at the recent meeting of the Kansas Medical Society to talk to an officer of the organization.

Our conversation eventually got around to a favorite subject of reporters, the poor relations between physicians and the press.

I was happy to discover that the doctor, from one of Kansas' larger cities, was sympathetic.

"I think you do well considering the reluctance of many doctors to talk to representatives of the press," he said.

He said he thinks doctors ethically can be quoted by name if the subject is of genuine newsworthiness or if the article contributes to the public health and welfare.

He went on to say that no doctor should seek pub-

licity for the gain of his practice. This is frowned upon by all doctors.

CARRIED TO EXTREME

He admitted, however, that some county medical societies carry the self-imposed ban on advertising to the extreme.

Although advertising is not ethically desirable for physicians, he said, there is no point in shutting out all legitimate avenues of information to the public.

The doctor said that often it is some isolated case which causes a physician to be careful about what he tells a reporter.

He told me about a personal experience he had as a small-town doctor several years ago.

An inexperienced young female reporter spent much of her time at the local hospital writing about cut fingers and other trivia.

The doctor avoided her when possible because she had developed a reputation for sloppy reporting.

FELL AT SCHOOL

A boy had fallen at school. The doctor examined him without X-ray because he was going to bind him around the middle in any case. It was pretty certain the boy had some broken ribs.

Just as he was ready to drive away in his car the reporter cornered him.

"Did the boy have any broken ribs," she asked.

A little perturbed at being detained, the doctor replied jokingly, "If he doesn't have some broken ribs, he has some that are pretty badly bent."

With that, he drove off.

That afternoon the paper came out with these headlines: "Boy Suffers Bent Ribs."

He never joked with reporters again.—*Hutchinson News,* May 9, 1960.

Blue Shield

(Continued from page 356)

Others Elected

Other officers elected at the Sunday meeting include Dr. E. Burke Scagnelli, Dodge City, 1st Vice-President; Dr. Robert K. Purvis, Wichita, 2nd Vice-President, and Dr. Charles S. Joss, Topeka, Secretary.

New trustees elected include Dr. W. H. Walker, Eskridge, and Dr. Carl C. Gunter, Quinter. One physician from each of the 17 Medical Society Councilor Districts serves on the Board, as do four representatives of the membership, elected by the Blue Cross-Blue Shield State Member Council organization.

Dr. Francis Collins, a past President of Kansas Blue Shield and a member of the Board and its Executive Committee for the past nine years, retired from the Board on May 1. He was given special honors at the Board meeting in Hutchinson and received an engraved plaque from the organization.

A.M.A. Industrial Health Congress

Representatives of industry, agriculture, medicine, and governmental agencies will gather in Charlotte, N. C., Oct. 10-12, for the the 20th Congress on Industrial Health.

To be held at the Hotel Charlotte, the congress is sponsored by the American Medical Association's Council on Occupational Health and is held each year as a means of furthering the development and maintenance of high medical standards in industry and on the farm.

Established in 1938, the council supports safe and healthful working conditions for employees through medical supervision of workers, control of environment, health education, and counseling, according to Dr. B. Dixon Holland, council secretary.

The congress programs are primarily directed toward the general practitioner, whom, it is estimated, handles close to 90 per cent of all the occupational medical practice in the nation.

Among the topics to be discussed during the three-day conference are occupational health in agriculture, mental and emotional health in industry, problems in dermatitis in farm and industry, and occupational health problems in small employee groups.

Cooperating sponsors include the Medical Society of North Carolina, North Carolina Governor's Council on Occupation Health, Mecklenburg County Medical Society, and the Greater Charlotte Occupation Health Council.

In traveling around the United States, I have been made aware of a melancholy tension. The questions people ask are not related to their personal incomes or the need to find better ways to amuse themselves. They want to know how to overcome their sense of personal futility on the big issues. . . . This is the great American problem of 1960, not the steel strike or inflation or farm subsidies or TV quiz shows. The individual would like to become relevant but doesn't know where to take hold or what to do even if he could take hold.—*Norman Cousins*

Functionalism in architecture must not serve as an excuse for ugliness. If we do not live in beauty, surrounded by beauty, we shall lose the idea of beauty and with it the idea of goodness.—*Frank Lloyd Wright*

KMS Obituaries

ALBERT BAIRD, M.D.

Dr. Albert Baird, 57, Parsons, died May 14, in St. Francis Hospital after a brief illness.

He was born July 15, 1902, in Kentucky, and was a physician in the Parsons area for many years.

He received his medical degree from the Eclectic Medical College in Cincinnati, Ohio, in 1927. He became a member of the Society in 1933 and was a member of the Labette County Medical Society at the time of his death.

Dr. Baird was a member of the Episcopal church.

He is survived by his wife and a daughter.

LOE ALBRIGHT SUTTER, M.D.

Dr. Loe Albright Sutter, 76, of Wichita, retired physician and surgeon, died unexpectedly April 26 at Wesley Hospital.

Dr. Sutter was born June 13, 1883, at Leon, Kansas.

He was a member of First Seventh Day Adventist Church, Wichita Masonic Lodge and Sedgwick County Medical Assn. and was co-founder and charter member of Wichita Gun Club.

He attended University of Colorado, Boulder, and served his internship at Massachusetts General Hospital, Boston. Before coming to Wichita from New York in 1914 he was on the staff of Bellevue Hospital, New York City.

Survivors include his wife, three half brothers, a sister, and a half sister.

CHARLES S. HUFFMAN, M.D.

Dr. Charles S. Huffman, widely known Kansas physician, who was former lieutenant governor, adjutant general and state senator, died May 6 in a Columbus hospital after an extended illness. He was 94.

In 1949 the Kansas Medical Society held a ceremony designating him the "Kansas Doctor of the Year." He was chosen for this honor from among candidates presented by most of the county medical societies.

He was born Oct. 8, 1865, at Vincennes, Ind. With his parents he came to Kansas in a covered wagon, arriving in Cherokee County in 1874. The family settled on a homestead a few miles west of Columbus. After finishing high school, he taught for several years in Cherokee County and then entered the Missouri Medical College at St. Louis. He received his M.D. degree in 1890 and began the general practice of medicine at Columbus. In the Spanish-American War he was medical officer in the 20th Kansas Regiment of Volunteers and served in the Senate 16 years. He was elected lieutenant governor in 1918 and re-elected in 1920. He gave much attention to secure legislation for public health, medical schools and hospitals.

In 1903 he was selected secretary of the Kansas Medical Society. Annual re-elections followed, and he served 15 years in the office. He was then elected president of the society.

Named by Gov. Paulen as chairman of the State Board of Administration, Dr. Huffman served six years in the work of administering the affairs of state institutions.

Dr. Huffman is survived by a daughter and a grandson.

E. H. CLAYTON, M.D.

Dr. E. H. Clayton, practicing physician in Arkansas City for more than 50 years, and a loyal supporter of the cities baseball program, died unexpectedly May 10 of an apparent heart attack.

Dr. Clayton had been actively engaged in his practice, keeping some office hours, since an illness in February. He maintained an office in the A. C. Office Building. In the early days he shared an office with the late Dr. C. R. Spain.

Dr. Clayton came to Arkansas City from Chicago in 1909 following his graduation from the Illinois University Medical School, and an internship in Lakeside Hospital, Chicago. He has been a practicing physician here ever since.

Dr. Clayton was a member of the Cowley County Medical Association, the Memorial Hospital Staff and the Arkansas City Academy of Medicine, devoting his entire life to the health of the community.

During World War I he was a captain in the Medical Corps, stationed at Vancouver, Washington.

A member of Trinity Episcopal church since he first came to Arkansas City, Dr. Clayton was active in its support, was a former vestryman, and a prominent member of the Men's club.

Survivors include his wife, two daughters, three sons, eight grandchildren, and one great-grandchild.

The Kansas Medical Society—1960-1961

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Scientific
ARTICLES

Brown Spider Bites

A Survey of the Current Problem

C. M. LESSENDEN, JR., M.D., *Topeka, and*
L. K. ZIMMER, M.D., F.I.C.S., *Lawrence*

The prevalent brown spider, *Loxosceles reclusa*, has been definitely identified as the cause of necrotic arachnidism in Kansas as well as in Missouri and Oklahoma. A typical case presents a distinctive clinical picture characterized by more or less severe local pain at the site of the bite and systemic symptoms which may include general malaise, fever, and frequently a fine morbilliform rash. The venom of *Loxosceles reclusa* has a powerful local necrotizing action, as well as a hemolytic effect. The hemolytic effect of Loxosceles toxin may be so severe that hemoglobinuria (Black Water Fever) can result. Locally, the area of ischemia which invariably surrounds the location of the bite is, in turn, surrounded by a zone of ecchymosis.

The untreated case frequently progresses to local necrosis and ulceration, with eventual healing by granulation and scar tissue formation.

Treatment in the early stages with Hydroxyzine Hydrochloride in large doses has been found to prevent necrosis.

A case of probable brown spider bite with fatal termination is reported.

SPIDERS HAVE ALWAYS RECEIVED a great deal of attention. They have been the symbol for all things eerie . . . for dark, mysterious places. Freud wrote about the "symbolism" of spiders and Karl Abraham attempted to define the fear and fascination that we exhibit toward them. In a wonderful study, Gloyne discusses a mass hysteria that gripped a section of Italy in the 12th Century, in which the spider, the region, the music and the dances from this region, all have a common name—Tarantelle (tarantula). Many people are able to control their fear for spiders only on the assurance that they are non-poisonous. It is not surprising, then, that when a new poisonous spider appears among us, it should receive a great deal of attention.

There is some evidence that the necrotic arachnid bites are not new in Kansas. A case was recorded and photographed in 1951[4] and several older practitioners have told us that they have seen similar lesions over the years, but never commonly.

The series of cases herein presented began in the summer of 1954 *(Case No. 1)*. This lesion was not recognized for what it was at the time, but it was photographed as being something unusual. Since this first case, the bites have increased geometrically each year. Part of this may be due to the publicity which the brown spider has received and to the emotional factors mentioned previously, with increased public awareness.

The cause of these necrotic lesions was established

by Dr. James A. Atkins, who offered a child who had been bitten, a dollar each for live spiders of the type that had bitten her. Atkins and co-workers were then able to reproduce the lesions in experimental animals.[6]

One of our early patients who was bitten by a spider and had crushed the arachnid was able to pick out *Loxosceles reclusa* from a large collection of various species of spiders at the University of Kansas Museum of Entomology without hesitation. In other cases under our observation, we were able to identify the spider from remains which were brought in by the patient. In the death which we are reporting *(Case No. 6)*, the farmstead and neighboring homes were heavily infested and several hundred specimens were collected from this vicinity in the following weeks. It would appear, then, that the cause of the necrotic bites is well established as being due to *Loxosceles reclusa.*

The Spider

The genus Loxosceles is widely distributed throughout the southern half of North America and the northern half of South America *(Figure 13)*. As far as is known, only *L. reclusa* and *L. laeta* are venomous enough to produce these lesions. The spider is relatively easy to recognize, and has no close relatives, so that if it looks like a brown spider, it probably is one, and an expert is not required for identification.[7] The spider is not large, but has legs which are quite long. The adult female varies from about 7 mm. to 12 mm. and averages about 9 mm. in length. Males have about the same size range as females, but the average length is about 8 mm. It may be any one of several shades of brown, but there is no pattern save over the cephalothorax where a well-defined dark area resembling a violin in shape may be seen *(Figures 1 and 2)*. Like all spiders, the brown spider injects its venom through the chelicerae, which are appendages immediately in front of the mouth. When the spider bites, it forces tiny fangs into the body of the victim and injects its venom. In the genus Loxosceles, the venom glands are located in the head portion of the body. The amount of venom injected by the spider is small, and the potency apparently is many more times toxic than that of a rattlesnake.[8]

This spider prefers dark but dry areas for its habitat and spins a coarse, irregular web in these locations. Fruit cellers, basements, under porches, and about porch furniture are likely locations. It does not seem to be aggressive, and none of our cases were attacked in a location where the spider could get away. About 75 per cent of the bites occurred while the victim was in bed or when the spider was in donned clothing. Only one case occurred in an outside toilet—a favorite haunt of the black widow.

There has been much speculation as to why these bites should suddenly appear in great numbers in our area. As can be seen from *Figure 13,* the American Natural History Museum Survey found much greater numbers in the southern Central Plains area, but the bites have not been recorded in these states. Perhaps to survive our more rigorous weather, it has moved into our dwellings.

That the brown spider population has had an absolute increase, there can be no doubt. Dr. Robert E. Beer of the Department of Entomology of Kansas University has suggested that this has one of two explanations:

First, the spider may have mutated enough to allow it to move northward and survive, or second, we may have had "good spider years" when temperature, rainfall, increase in natural food supplies, and other factors combined to increase the spider population. Upon the answer to this question, depends the permanence of our present problem.

Symptomatology

From our cases, we have selected a few reports which illustrate the course these bites follow, but some generalizations are possible from the material at hand. Immediately the patient feels a stinging sensation which is not is not at all severe—much less than an ant bite or honey bee sting. The pain is progressive, however, and within the first eight hours may become quite severe. Usually within 12 hours a soft, thin-topped bleb surrounded by a bright zone of erythema appears at the site. This ruptures quickly to leave a thin brown crust. By 18 to 24 hours the area previously occupied by the erythema begins to darken —at first bluish—and steadily becomes darker until the area is occupied by the black, tough eschar of a dry gangrene by the end of the fifth to seventh day *(Figures 3-6 and 7-10)*. At about 36 hours when the local reaction is at its height, a morbilliform eruption over the trunk may appear, associated with fever and arthralgia. These symptoms usually have disappeared by the end of the first week. The eschar then slowly separates, to be followed by eventual healing by the end of the tenth week. Although we have not been able to demonstrate it experimentally, there is some clinical evidence that a fair immunity is developed after one bite *(Case No. 2)*.

During the first few days following the bite, hemolysis is quite often observed. Even in rather mild cases this may be observed in the blood serum, even though there is no gross hemoglobinuria. We have noticed some slight amount of hemolysis in some of our patients even though the bite was of a minor nature. In severely ill patients, gross hematuria and massive intravascular hemolysis may take place. Such a case of massive intravascular hemolysis, which was probably due to the bite of a brown spider, was

Top row, left to right: *Figure 1.* Female L. reclusa. *Figure 2.* Male L. reclusa. *Figure 3.* Bite at about 12 hours. Second row, left to right: *Figure 4.* Same Patient eighth day. *Figure 5.* Same Patient five weeks. *Figure 6.* Same Patient 10 weeks. Third row, left to right: *Figure 7.* Bite at about 20 hours. *Figure 8.* Same Patient two weeks. *Figure 9.* Same Patient five weeks. Bottom row, left to right: *Figure 10.* Same Patient nine weeks after debridement. *Figure 11.* Bite upper thigh one week. *Figure 12.* Bite at 10 weeks.

described recently by Weiner, Stoffer, Chornock, and Young.

In handling these cases, it was soon found that the morbidity could be considerably decreased by adequately excising the necrotic area as soon as the gangreneous area was well outlined. This usually was between the 14th and 21st day. Besides reducing the morbidity, it provided a plethora of tissue for study.

Pathology

The earliest tissue available was taken about 18 hours after the bite. The major changes here, as in all the sections, were within the blood vessels. Early, this amounts to edema with thickening of the endothelium. There is also edema of the surrounding stroma and collections of inflammatory cells. Later, the endothelium continues to thicken until the smaller vessels are completely occluded, and the infiltrate continues to be heavier. With the exception of small collections of eosinophiles, the infiltrate is composed of polys and small round cells *(Figures 14-17)*.

After the eschar has formed, the epidermis at the edge of the ulcer crater participates in the process secondarily. There is no regularly found change, except irregular thickening *(Figure 14)*. The ulcer crater is surrounded by a dense zone of granulation tissue containing large numbers of polys, histiocytes, and small round cells *(Figure 15)*. The granulation

Figure 13. Distribution of *Loxosceles reclusa,* after Gertsch, Ref. No. 11.

tissue gradually shades into an area of edema and spotty fat necrosis containing large, non-specific, foamy macrophages. The medium sized blood vessels at the periphery show degenerative changes of their walls, contain a "blood sludge," and are surrounded by an intense perivascular infiltrate *(Figures 16 and 17).*

CASE REPORTS

Case No. 1

A 55-year-old female, Spanish-American, employed as a charwoman in a grocery store. After donning a thrice-worn cotton uniform coat early one morning (the coat had hung undisturbed for two days in the open back room near her cleaning supplies), she felt a stinging sensation on the left posterior axillary fold. The pain was rather evanescent, and upon immediate examination, she was unable to see anything at the site. By the next morning the pain was more severe, a coin-sized erosion (ruptured bleb) was visible, and a baseball-sized swelling was beginning to turn dark. She worked her usual eight hours the second day, but by evening was chilling, had joint pains, headache, and was nauseated.

She was seen the morning of the third day with a four by six cm., purple area at the site of the bite which was indurated and exquisitely tender. Her temperature was 101 degrees F. and she said she had been unable to keep anything in her stomach for the preceding 12 hours. During the next five days, her temperature ranged to 103 degrees F. and the purple lesion gradually became a tough, black eschar, and the swelling gradually subsided. She returned to work on the 14th day. The slough separated in four weeks to leave a two by four cm. granulating ulcer which slowly healed in over the next few weeks *(Figure 12).*

Case No. 2

This patient was an elderly, rather obese woman who was seen on December 3, 1958 with a lesion on the right buttock which was characterized by a small necrotic area surrounded by a red and ecchymotic zone as big as a half dollar. It appeared to be a typical brown spider bite, although the patient could not state definitely that it was a spider which had bitten her. She state that she had been awakened in bed by a stinging sensation. She gave a history of having been treated in September of 1957 by another physician for a diagnosis of "spider bite" on the upper arm. This earlier lesion was extensive, and she had a deep ulcer of the upper arm which took between two and three months to heal. She still had a noticeable scar of the upper arm at the time of the second bite.

The second lesion progressed to complete healing in a few days without scar.

Case No. 3

A full blooded Indian, male, age 36. This man was picking up an armful of fire wood from a wood pile when he was bitten by a brown spider, which he brushed off and did not further identify. Extreme pain developed at the site of the bite on the upper medial surface of the left arm. He was taken to a doctor's office immediately where he collapsed and

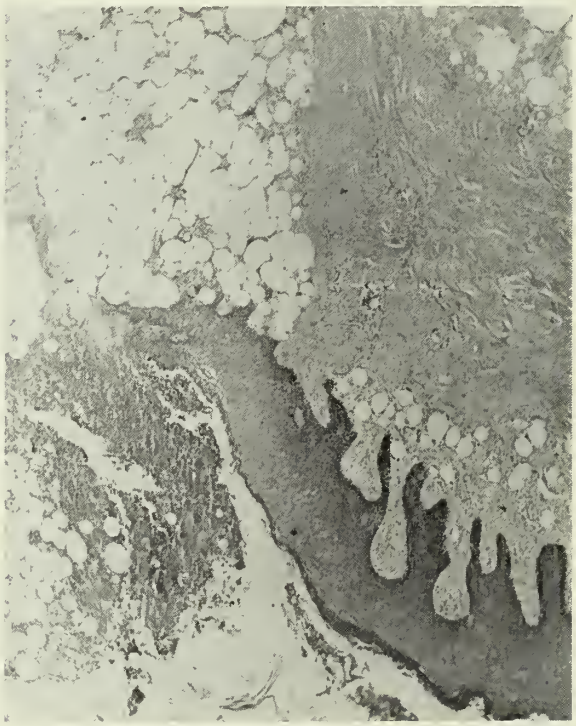

Figure 14. Section through edge of ulcer showing irregular thickening of epidermis, dense granulation tissue and fat replacement atrophy.

became unconscious. His blood pressure dropped to 60 mm. systolic. He was given intravenous cortisone and supportive treatment at the Lawrence Memorial Hospital for several days, and then allowed to go home. A typical skin lesion developed at the site of the spider bite. There was an area of approximately 12 x 25 mm. in extent which was white and covered with a thin blister surrounded by a large flaring zone of redness. Necrosis developed in the center of the white area, which enlarged as the area of redness and induration regressed. This was one of our earlier surgical cases in which we delayed excision of the ulcer until about one month after the bite. We have since come to the conclusion that the most propitious time for excision is approximately two weeks after the bite. The ulcer and underlying adipose tissue was excised and healing took place by primary union.

Case No. 4

D. M. C., white, male, age 35. This man was cleaning out lint from a clothes dryer when he was bitten on the upper right arm. He developed intense, severe pain at the site of the bite, and within a few hours became ill. He had fever of 104 degrees F. and developed the typical fine morbilliform rash on the following day, which persisted for several days. He was treated with cortisone and required fairly large doses of codeine for the relief of pain. His general symptoms gradually subsided, although he was quite weak

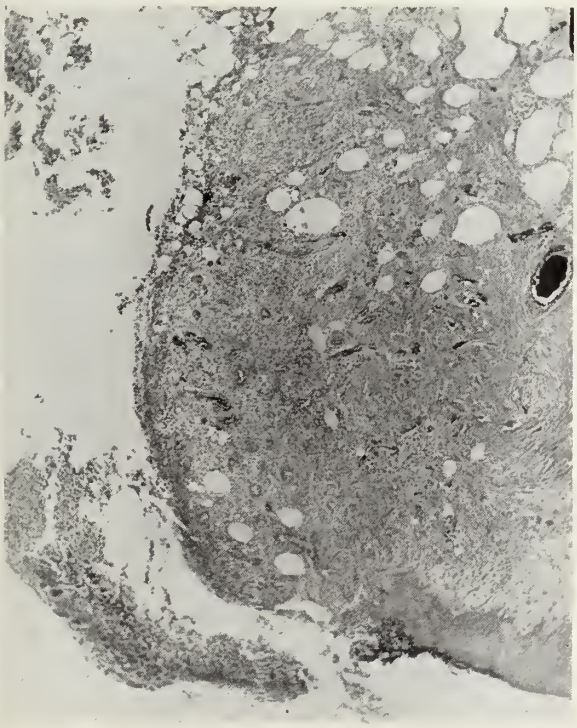

Figure 15. Section of depth of ulcer showing dense granulation and blood sludge filled venule.

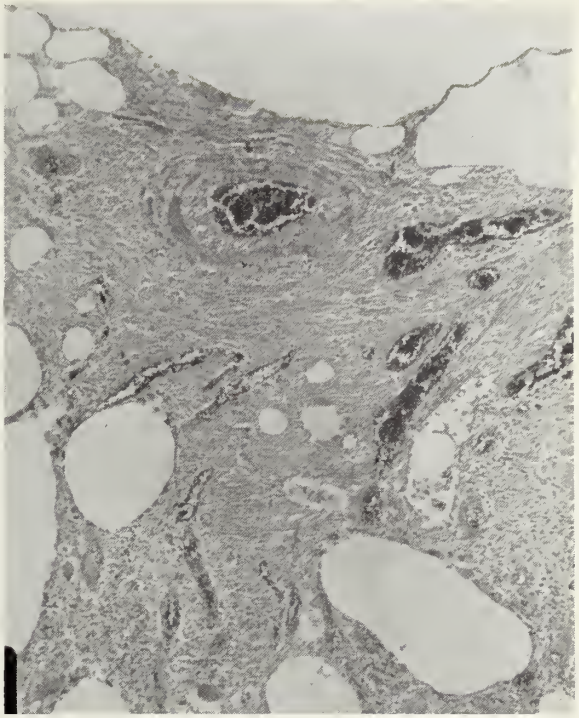

Figure 16. High power view of granulation tissue showing intense perivascular infiltrate.

and prone to fainting spells for two weeks following the bite. Two weeks after the bite, he had developed an area of necrosis of the skin approximately two by 3.5 cm. surrounded by an area of erythema and induration. Five weeks after the bite, the necrotic area of skin began to slough off, and was removed, leaving an ulcer about five or six mm. deep. After another month the ulcer finally healed by scar tissue formation *(Figures 7-10)*.

This man was shown a collection of different spiders at the Museum of Entomology at Kansas University, and he unhesitatingly picked out a preserved specimen of *Loxosceles reclusa* as the only one resembling the spider which had bitten him. He had crushed the insect, but did not preserve it for positive identification.

Case No. 5

Mrs. L. J., white, female, age 62, was seen in August, 1956, for an ulcer of the lower left quadrant of her abdomen. She stated on admission that she had had this ulcer for several weeks, and thought that she had been bitten by a spider about a month prior to her admission to the hospital. She had a deep ulcer which was approximately 4.5 by two cm. in diameter, and about 12 mm. in depth. The ulcer had steep margins and the floor was made up of fatty tissue.

An eliptical segment of skin and subcutaneous fat measuring 15 x five x three cm. was excised. There

Figure 17. High power view of venule showing extensive swelling and damage to vessel wall and perivascular tissues.

was extensive fat necrosis which extended down to the deep fascia. She made an uneventful recovery after the operation.

The histopathology in this case showed the typical findings of our other spider bite cases.

Case No. 6

A vigorous five-year-old boy from a non-allergic family of eight siblings awakened his mother at 5 a.m. on May 21, 1959 by vomiting and crying with pain. The mother felt that he had fever at that time, but was unable to find any cause for the pain which was localized about the right anterior chest. He was given aspirin and he went to sleep later in the morning. In mid-morning, his symptoms had increased and he was brought to a hospital emergency room where he was found to have an eight inch blotchy ecchymotic area on the right chest with rather minimal swelling. His temperature was 103 degrees F. and he was restless and nauseated. He was given emergency treatment and returned home. During the day he did not improve, and by early evening became worse. His respirations became rapid and shallow, and eventually he became cyanotic and had a convulsion. His parents brought him back to the hospital where he was found to be dead on arrival.

There were some significant and unusual findings on autopsy of the child. In the right lower portion of the chest wall there was a small one mm. blackish area of central abrasion, and surrounding this, an area approximately 4½ in. in diameter of ecchymosis, hemorrhage, and edema. The laryngeal opening was completely closed and the vocal cords were in approximation due to the extensive edema of the larynx. The kidneys were moderate in size, but congested and reddish black in appearance. The ureters contained blackish, inky red urine. Sections of the kidney revealed extremely marked edema of the renal tubular epithelium. The pathological diagnosis was:

Spider bite, producing allergic response with obvious hemolysis and hemoglobinuria; toxic nephrosis; toxic hepatosis; lymphoid hyperplasia; acute laryngeal edema with asphyxiation.

Further circumstantial evidence that this case was one of brown spider bite due to *Loxosceles reclusa* was the heavy infestation of the child's home and premises with *Loxosceles reclusa.*

Case No. 7

A 34-year-old housewife was seen with a bite in the right popliteal area. At the time of her first visit, she had a hemorrhagic area about four centimeters in diameter surrounding a two centimeter blister. While sitting in the waiting room, she began to break out with a morbilliform eruption, fairly well generalized. She was started at once on 100 mgm. of hydroxyzine hydrochloride four times a day.* she was seen four days later, at which time the hemorrhagic spot was pinker. There was little swelling contained in it and the blister had dried to a thin tough scab. One week later the remnants of the blister were still present; there was a shallow, one centimeter ulcer in the center of the blue area; and the entire lesion appeared to be healing. Two weeks later, a thin scar was present.

Case No. 8

A 20-year-old clerical worker became aware of a stinging sensation on his anterior chest wall. He scratched it a little and an hour or so later looked and found a raised, red papule about the size of a 25 cent piece. During the day it steadily increased in size and by bedtime it was as big as a baseball. On arising in the morning, he discovered that there were some red streaks extending from this towards his axilla, and he felt stiff and sore all over. He was seen early in the morning of the second day, at which time the area of erythema was the size of a baseball and in the center a small ecchymotic area was forming. There was no blister as yet. His temperature was 99.5 degrees F. The only treatment was hydroxyzine hydrochloride, 100 mgm. four times a day, and bed rest. He was seen three days later, at which time there

* Treatment suggested by Ray Vickers, M.D., Department of Medicine, University of Missouri Medical School, Columbia, Missouri. Private communication with the authors.

was a one centimeter spot or erythema slightly elevated above the surface of the surrounding skin that contained a central puncta, slightly hemorrhagic. The entire lesion had a slightly bluish cast and did not appear to be going on to sloughing. There was still a small node, the size of an almond in the right axilla.

Treatment

The results of a bite by *Loxosceles reclusa* can have sudden, dramatic, and frightening results. As a general rule, it does not progress rapidly, and the continuing pain at the site of the bite will bring the victim to the doctor relatively soon. If seen within the first 24 to 36 hours, antihistaminic agents given in large doses have been fairly effective in controlling both the general symptoms and the appearance of the necrosis. Of the materials available, we selected Hydroxyzine Hydrochloride® on the basis of its relatively slight side effects from the doses required. So far, we have treated six patients thusly, with the formation of a small ulcer in only one case *(Case No. 7)*. We hope to pursue this study further.

If tissue death at the site of the bite has already occurred, we believe that adequate surgical excision is indicated as soon as the zone of necrosis is well outlined—usually by the end of the second week. In our earlier cases, we were able to reduce the morbidity from about ten weeks to around three weeks by this procedure. There is as yet no specific antivenom available, but several studies are proceeding in this direction. Of course, even the remnant of the biting organism helps tremendously with early diagnosis. Patients should be encouraged to bring the crushed spider with them on their first visit. In cases with with circulatory collapse or anaphylactoid reaction, appropriate measures with soluble steroids, etc., are indicated.

The hydroxyzine hydrochloride used in this study was supplied as Atarax® by J. B. Roerig and Company. The authors wish to express their thanks to Mr. S. B. Higgins of J. B. Roerig Company for his cooperation and support in reproducing the color protographs.

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Cigarette Smoking and Cardiovascular Diseases

In 1956 the American Heart Association issued a statement on smoking and cardiovascular diseases. Among other things, this statement indicated that the available evidence at that time was not sufficient to justify conclusions concerning a cause and effect relationship between cigarette smoking and increased death rates from coronary heart disease. Since then sufficient additional knowledge has accumulated to warrant a new report on cigarette smoking and its possible relationship to cardiovascular diseases.

Up to the present, a number of medical studies have been made, nearly all demonstrating a statistical association between heavy cigarette smoking and mortality or morbidity from coronary heart disease. In these studies, death rates from coronary heart disease in middle-aged men were found to be from 50 to 150 per cent higher among heavy cigarette smokers than among those who do not smoke. This statistical association does not prove that heavy cigarette smoking causes coronary heart disease, but the data strongly suggest that heavy cigarette smoking may contribute to or accelerate the development of coronary heart disease or its complications.

Because coronary heart disease is the leading cause of death and a major cause of disability in the American population, the Association believes that these studies concerning cigarette smoking and coronary heart disease should be called to the attention of the medical profession, allied health professions, health educators, and the general public. The Association recognizes the need for more knowledge and will continue to encourage systematic biological and medical research in order to determine whether a causal relationship exists between cigarette smoking and coronary heart disease and also to determine the effects of smoking in relation to strokes and other important aspects of cardiovascular diseases.

Mental Retardation

Results With Triflupromazine (Vesprin®) in the Treatment of Mentally Retarded Children

HOWARD V. BAIR, M.D.; BENJAMIN GOLDBERG, M.D.,
and* HENRY LELAND, Ph.D., *Parsons

THE ABNORMAL BEHAVIOR CHARACTERISTIC of many institutionalized mentally retarded children presents major problems in their care and management. Any reduction in the destructiveness, noisiness, temper tantrums, and violence commonly exhibited by this group of patients is desirable, both to the children themselves and to the staff in whose care they are placed. Treatment, training, and rehabilitation procedures can then be more easily instituted.

Over the past several years, a number of the newer tranquilizing drugs have been used with considerable success in the treatment of the mentally retarded children housed at this institution. Their use, however, has been accompanied by some unwanted reactions, and the search has therefore been continued for a safe drug without such side effects which is beneficial in the management of mentally deficient patients.

Doctor Bair is superintendent, Parsons State Hospital and Training Center, Parsons, Kansas. Doctor Goldberg is an acting clinical director of the hospital and Doctor Leland is director, psychology department.

Vesprin History

Since its introduction in 1957 triflupromazine hydrochloride (Vesprin)* has proved to have con-

* Supplied by Squibb Institute for Medical Research, New Brunswick, N. J.

TABLE I

THE PATIENTS

Diagnosis	*No. of Patients* MALE	FEMALE	TOTAL	*Age (Years)*
Idiopathic mental deficiency	11	14	25	9 to 22
Familial mental deficiency	0	1	1	
Chronic brain syndrome:				
Associated with congenital brain defect	30	15	45	7 to 22
Associated with postinfectious encephalopathy	4	5	9	12 to 18
Associated with mongolism	5	3	8	10 to 18
Associated with postingectious encephalopathy	1	2	3	12 to 23
Associated with microcephalus	0	3	3	15 to 20
Associated with phenylpyruvic oligophrenia	0	2	2	15 to 20
Totals	51	45	96	
Psychometric Classification				
Intelligence quotient:				
Less than 20	5	5	10	
20 to 29	9	1	10	
30 to 39	13	10	23	
40 to 49	14	6	20	
50 to 59	1	11	12	
60 to 69	6	4	10	
70 to 79	0	4	4	
80 to 89	0	1	1	
Untestable	3	3	6	
Totals	51	45	96	

A total of 96 mentally retarded children was treated with Vesprin in daily doses ranging from 20 to 240 mg. for a period of three months. Evaluation of certain characteristics of behavior indicate that the composite pattern of abnormal behavior in these children improved, the children becoming less of a management problem.

The results of this study indicate that Vesprin has definite value in the medical management of emotionally disturbed and severely retarded mentally deficient children and that it has few side effects. Study of this drug is being continued.

siderable usefulness in improving abnormal patterns of behavior in schizophrenic, manic, and other psychotic states.[1-5] There existed the possibility that the drug might have considerable value also in favorably modifying abnormal behavior in emotionally disturbed and severely retarded mentally deficient children. Accordingly, a study was undertaken at this hospital to evaluate Vesprin in the treatment of mentally retarded children. To date, results of treatment for three months have been quite impressive and, though the study is continuing, a brief description of these results is offered at this time as a preliminary report.

Material

A total of 96 children was studied; of these, 51 were boys and 45 were girls. Their chronological ages ranged from seven to 22 years. All of the children were mentally deficient. In 45, a chronic brain syndrome was present associated with varying etiologic factors. One child had familial mental deficiency while 25 others were considered to have idiopathic mental deficiency. Psychometric tests yielded an intelligence quotient below 20 in 10 of the 96 children, between 20 and 49 in 53 others, and between 50 and 83 in 27 additional children. Psychometric tests were not possible in the six remaining children in the series. The distribution of diagnoses and psychometric classifications for the entire group appears in *Table 1.*

TABLE II
BEHAVIOR RATINGS IN 45 MENTALLY RETARDED GIRLS
BEFORE AND AFTER TREATMENT WITH VESPRIN

	Before Therapy (No. of Patients)			*After Therapy (No. of Patients)*		
Criteria of Behavior Rated	++	+	−	++	+	−
Untidiness	8	10	26	8	12	24
Wetting	11	6	28	8	5	32
Soiling	9	6	30	6	8	31
Noisiness	11	21	12	8	21	15
Restlessness	15	29	1	14	25	6
Irritability	9	20	16	6	23	16
Restlessness	13	22	10	5	27	13
Destructiveness	4	20	20	2	16	26
Assaultiveness	3	16	24	2	11	30
Self-mutilation	7	11	27	3	9	33
Self-absorption	10	22	13	7	27	11
Idleness	5	17	23	3	18	24
Bizarre Behavior	6	22	12	5	19	16
Anger	7	27	11	5	29	11
Appetite	2	39	3	2	38	4
Sleep	2	39	3	1	42	1
Cooperation	2	21	22	0	22	23

++ represents "excessive."
+ represents "average."
− represents "none" except for appetite and sleep where this symbol represents "poor."

All of the children had been receiving varying dosages of chlorpromazine before the study with Vesprin was begun, and some were also receiving stimulating drugs and anticonvulsant medication. Without exception, chlorpromazine and stimulants were discontinued but anticonvulsants were all maintained.

Procedure

Vesprin was administered orally, either as an elixir or in tablet form, throughout the period of study. Daily doses ranged from 20 to 240 mg. Initial doses were usually 10 mg. two, three, or four times a day; as treatment progressed, the dosage was adjusted according to the response of the patient. Before treatment with Vesprin was started, the complications present in each child were compiled and evaluations were made in every case on a rating chart which included 17 items of behavior. Behavior traits were rated again and complications compiled at the completion of the first two months of treatment as well as at the end of the period of study of three months. Blood pressure and pulse were also recorded in each case before and at the end of the treatment period, complete blood counts were taken and the values for serum alkaline phosphatase,* serum bilirubin and urinary bilirubin were determined.

Results

Table II presents the total behavior ratings for all of the girls in the series, before and at the completion of three months' treatment with Vesprin. *Table III* gives corresponding ratings for boys studied. Reference to these tables discloses a reduction in most of the abnormal criteria tabulated after treatment with Vesprin. For example, except for untidiness, fewer patients exhibited any of the traits evaluated to an excessive degree, and more children showed none of these characteristics during than before treatment, except for untidiness, self-absorption, irritability, idleness, and anger. (The number of children exhibiting no irritability, idleness and anger was the same during as before therapy, while the number who were untidy or self-absorbed was greater.) While the difference in traits exhibited before and during therapy was small in most instances, the reduction in

* According to a new procedure designed as "Phosphatabs with Teswells," a laboratory screening technique which utilizes a color-chart index of hepatic sensitization as revealed through the serum alkaline phosphatase level.

TABLE III

BEHAVIOR RATINGS IN 51 MENTALLY RETARDED BOYS BEFORE AND AFTER TREATMENT WITH VESPRIN

	Before Therapy (No. of Patients)			*After 3 Months Therapy (No. of Patients)*		
Criteria of Behavior Rated	++	+	−	++	+	−
Untidiness	7	19	25	9	25	17
Wetting	9	11	31	8	7	36
Soiling	7	8	36	5	6	40
Noisiness	9	22	20	8	27	16
Restlesness	17	28	6	21	24	6
Irritability	8	22	21	9	23	19
Resistiveness	14	19	18	10	25	16
Destructiveness	8	19	24	6	22	23
Assaultiveness	8	21	22	2	19	30
Self-mutilation	7	10	34	2	6	43
Self-absorption	18	15	17	8	25	17
Idleness	7	14	30	4	27	20
Bizarre behavior	7	20	19	6	17	23
Anger	13	26	12	8	31	12
Appetite	7	42	2	6	43	2
Sleep	2	45	4	0	51	0
Cooperation	4	27	20	0	38	13

++ represents "excessive."
+ represents "average."
− represents "none" except for appetite and sleep where this symbol represents "poor."

the number of patients exhibiting dirty habits, assaultiveness, destructiveness and self-mutilation was rather striking and the composite pattern of abnormal behavior improved. This improvement was reflected in improved personal habits of the children, more interest in their surroundings with less damage to themselves and to others, as well as less damage to the property in which they were housed. The children became easier to manage and hence less of a care problem.

Side effects developing during treatment with Vesprin were relatively few as compared to those encountered previously with chlorpromazine. For the most part, they were mild and more of a nuisance than of any clinical consequence. Drowsiness, stuffy nose, skin rash, and constipation were relatively frequent, but these effects were present in more patients before than during treatment with Vesprin. Depression was present in 30 of the 96 patients during treatment but this condition had been present prior to initiation of Vesprin in 43 of the 96 patients and developed for the first time in no patient after Vesprin was begun. Convulsions, which had occurred in nine patients prior to therapy, developed in only four during treatment; but in every case the child was seizure-prone. Jaundice present in one mongoloid boy prior to therapy was still apparent during therapy, whereas jaundice which had been present in a female patient before therapy disappeared during therapy. A hypotensive effect was seen in 21 of the 96 patients but this was significant* in only nine and special** in only two of the 21 patients and in no case was supportive therapy required. The side effects observed in the entire group before and during treatment with Vesprin appear in *Table IV*.

The laboratory determinations before and after treatment with Vesprin revealed no significant variations in the white blood count of any patient. There were some changes in serum alkaline phosphatase levels but with few exceptions these were within physiological limits and apparently unrelated to treatment. For example, levels rose after therapy in 14 patients, but levels fell after treatment in 35 and

* Drop in diastolic pressure of more than 20 mm. Hg.
** Drop in diastolic pressure of 30 and 43 mm. Hg. respectively.

(Continued on page 393)

TABLE IV
SIDE EFFECTS

Side Effect	*Present Before Treatment (No. of Patients)*			*Present During Treatment (No. of Patients)*		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
Headache	16	8	24	10	2	12
Skin rash	7	4	11	8	4	12
Drowsiness and weakness	13	17	30	10	18	28
Stuffy nose	14	7	21	11	5	16
Dryness of mouth	2	5	7	4	7	11
Excessive drooling	8	2	10	3	3	6
Constipation	6	8	14	6	7	13
Diarrhea	3	2	5	0	2	2
Jaundice	1	1	2	1	0	1
Tremors	3	3	6	4	2	6
Convulsions	6	3	9	3	1	4
Poor vision	6	4	10	5	7	12
Depression	25	18	43	16	14	30
Poor balance	8	8	16	2	7	9
Nausea and vomiting	2	1	3	1	1	2
Fever	2	0	2	3	1	2
Hypotension	not recorded			8*	13**	21

* Decrease in diastolic pressure of 12 to 26 mm. Hg.
** Decrease in diastolic pressure of 12 to 46 mm. Hg.

Phenylketonuria—Dietary Treatment

Observations on the Treatment of a Patient With Suspected Phenylketonuria

H. LELAND, Ph.D.; J. BAUMEISTER, M.D., *and* T. STEBBINS, Dietitian, *Parsons*

A 10-year-old boy who had been diagnosed as a borderline phenylketonuric patient was put in a special study by himself to determine whether or not the use of special low phenylalanine diet would have any effect on his behavior or intelligence. It was generally found that there was no special effect on intelligence and that in this case the diet by itself had no specific effect on behavior. However, the combination of diet and tranquilizing medication seemed to produce a very positive change in behavior, all in the direction of higher socialization and better control of hyperactivity and anti-social tendencies. The general conclusions are highly inconclusive. It is not immediately obvious from the evidence presented what brought about these changes, but we feel that the combination of the tranquilizer and the special low phenylalanine diet, Enal, should be considered and further research will have to be done toward this end.

THE RESEARCH, IN THE LAST few years, around the control of phenylpyruvic oligophrenia (phenylketonuria) through dietary means has yielded a wealth of information concerning the processes of this disease and some of the biochemical processes of the body. The various experiments have all more or less indicated that a phenylalanine poor diet produces changes in the phenylketonuric patient, which depending on the age of the patient, are more or less beneficial. It has been indicated that if the special diet can be started early enough, preferably under the age of one year, the results can be quite dramatic. As wonderful as the developments are, they pose an important question to most institutions whose phenylketonuric patients are much older than the proposed minimum.[2-7]

Phenylalanine Low Diet

The staff of Parsons State Hospital and Training Center decided to investigate the function of a phenylalanine low diet on a boy who has been described variously as "possibly phenylketonuric" or "possibly a carrier for phenylketonuria" but who has not been clearly diagnosed. This boy had the characteristics of the phenylketonuric patient; besides having the typical blond hair, blue eyes, and blue sclera, he showed most of the behavioral patterns, including those often associated with an autistic child. There was no evidence of physiological or clear cut neurological impairment and in general, aside from the biochemical question *(See Tables I & II),* appeared quite similar to phenylketonurics as described by Leland.

Case History

The patient was a 10-year-old white boy who had been admitted to Parsons State Hospital and Training Center in October 1955, when he was seven years of age. He had been first examined in Topeka in 1953 where laboratory tests found a trace of phenylpyruvic acid in one of three urine specimens.

The subsequent findings of laboratory tests at Parsons State Hospital and Training Center are shown in *Tables I & II.* It will be noted from the tables that his reports have never yielded clear cut results. Also, the blood serum results were variable, though at one point they did range a little bit higher than is considered normal for the average population.*

The principal investigators were aided in this study by Bertha Martin, Laboratory Technician, Ann Mehalko, Dietitian, and D. Smith, Psychologist, as well as other members of the staff of Parsons State Hospital and Training Center, and H. V. Bair, M.D., Superintendent.

The study was supported by the Schuman Laboratories, Inc., of West Lafayette, Indiana, who provided the Enal and other chemical components of the special diet, and by E. T. Mertz, Ph.D., Professor of Biochemistry at Purdue University, who permitted the use of his laboraory at the university for blood serum and other biochemical determinations.

The Vesprin was provided by the Squibb Institute for Medical Research, New Brunswick, New Jersey.

* Personal communication from Dr. E. T. Mertz.

On the basis of these findings it was decided to treat this patient as an atypical phenylketonuric, recognizing that he was only marginal, but feeling that results from this experimentation could add to the total knowledge in our work with these patients.

The patient from the time of his admission to Parsons State Hospital and Training Center had been on a ward with severely retarded children in the trainable category. He was included in a special education training class and though he was considered one of the less successful students he did show a small amount of growth during that period. His neurological evaluation revealed a boy who is generally subject to body tremors, is extremely distractible and hyperactive; his EEG taken at that time was interpreted as abnormal with diffuse paroxysmal dysrhythmia, however, during that period there was no evidence of seizures. His behavior has been characterized by aggressiveness, obscene verbalizations, exposing himself, and by a definite shifting back and forth from hyperactive to lethargic. Aside from the obscene verbalizations he has little communication though all examiners have remarked on the clarity and rapidity of his speech in spite of its inappropriateness.

TABLE I

URINALYSIS

–/53	10/55	12/55	7/56	11/56	2/57	5/57	7/57	5/58
+	–	–	?	+	?	+	–	–

Pregnancy and Birth Normal

Pregnancy and birth were reportedly normal, early development was within the normal range although a little slow, for instance he walked at 16 months, and began to say his first few words around the age of two. His medical history has been essentially negative and aside from the facts mentioned is noncontributory. In May 1958, he had his first grand mal seizure. At that time it was reported that he had been on a variety of tranquilizing medications, including Thorazine®, up to 600 mg. daily which produced temporary Parkinsonism, Equinal® up to 4800 mg. daily and at the time of the seizure a combination of 300 mg. of Thorazine and 15 mg. of Pacatal® daily. Medication was stopped as the result of the seizure and he was admitted to the hospital and placed in a single room. As mentioned above he had previously been on a ward with 13 or 14 other patients. There were no further seizures, so anticonvulsant medication was not started; however, he did remain on the hospital as his general behavior had deteriorated and he had become more hyperactive and less willing to cooperate with the aides and nurses. On August 2, 1958, a special phenylalanine poor diet was prepared under the direction of Dr. Mertz, similar to the one he had used previously: Four ounces of Enal used in the preparation of a formula. This formula was the liquid used in preparing a pudding and the remainder was used as a beverage for the meals. This yielded 25 grams of protein. Twelve ounces of whole milk yielded an additional 12.75 grams of protein or a total of 37.75 grams. Vitamins and mineral supplements were given to maintain a nutritionally adequate balance.

However, the child has been used to a regular diet

TABLE II

SERUM PHENYLALANINE LEVELS (MG/100 SERUM)

6-14-58	Blood specimens	5 mg.
7- 1-58	Blood serum paper test—not fasting	10 mg.
7- 2-58	Blood serum paper test—fasting	5 mg.
7- 3-58	Blood serum paper test—not fasting	10 mg.
9- 3-58	Fasting blood (1 mo. of diet)	3 mg.
10-10-58	Fasting blood (2 mo. of diet)	4 mg.
1-15-59	Fasting blood (1 mo. off diet)	4 mg.

TABLE III

PSYCHOMETRIC RESULTS

Date	*4/58*	*7/58*	*10/58*	*12/58*	*1/59*	*2/59*
C.A.	*9-7*	*9-10*	*10-1*	*10-3*	*10-4*	*10-5*
	Before	*A*	*B*	*C*	*D*	*E*
Battery	*Hospitalization*	*Hospitalized*	*Diet Alone*	*Diet With Vesprin*	*Vesprin Alone (On Cottage)*	*Vesprin Alone (On Cottage)*
CMMS	MA 3-5 IQ 36	Not testable	MA 3-1 IQ 31	MA 3-3 IQ 32	MA 2-5 IQ 23	MA 2-6 IQ 24
DAP	MA 3-3 IQ 34	Not testable	N.D. N.D.	MA 3-6 IQ 34	MA 3-6 IQ 34	MA 3-6 IQ 34
VSMS	AE 3-8 SQ 39	Not testable	AE 1-11 SQ 19	AE 3-0 SQ 30	AE 3-10 SQ 37	AE 2-10 SQ 27

and would not take the formula as such. He was not eating well and signs of protein deficiency developed. It was decided to slowly incorporate the Enal® into as normal as diet as possible. Foods such as bread, butter, all vegetables and starches, in the form of rice and potatoes, were given to satisfy his hunger. Small amounts of Enal were then introduced in the following ways: Some as part of the liquid to mix pudding, some was put into chocolate milk which was regular milk to which Hershey's® syrup had been added, and some was used as a powder and mixed into pureed fruits and other desserts. Gradually the amounts of Enal were increased until a total of three ounces of Enal were given each day. This yielded 16.5 grams of protein, 18 ounces of whole milk yielded 19.08 grams of protein and one and one-half slices of bread (45 oz.) provided 3.75 grams of protein per day. Total protein for the day was 39.33 grams. Other nutritive values based in the Food Composition Table[3] were adequate and no ill effects from this diet were noted.

Effects Measured

Though the boy was receiving more whole protein than is usually indicated, he was receiving a sufficient amount of Enal for us to measure the effects of the diet on his general behavior and performance. From *Table II* it will be noted that his blood serum level dropped from 5 to 10 mg. per 100 cc. to 3 mg per 100 cc. one month after the diet had been started, then went up slightly and leveled off at 4 mg. per 100 cc. for the rest of the period. He remained on the diet by itself for a period of three months, and there were some behavioral changes showing a gradual return to the behavior noted before the first seizure. In November 1958, tranquilizing medication (Vesprin®) was added to his program. The combination of tranquilizing medication and the special diet brought about an immediate and observable change in his behavior and in his test performance *(Table III)*. His behavior improved sufficiently that he was discharged from the hospital and returned to the dormitory; the special diet was discontinued and a regular diet was re-introduced. Tranquilizing medication was continued.

The patient was evaluated psychologically over a period of time with the Columbia Mental Maturity Scale (CMMS), the Draw-a-Person Test (DAP), and the Vineland Social Maturity Scale (VSMS); the results of which may be found in *Table III*. It will be noted that there has been no real change in the intelligence or the functional level during the experiment; however, in terms of the findings of other research,[2] this is not surprising in terms of his age. But, in some of the more qualitative areas, such as behavior, there have been some rather remarkable changes.

Before-After

Table IV indicates the performance changes between various tests. The "Before" battery represents the period before his first seizure. "A" battery and "B" battery are primarily related to the influence of the special diet. The functional level change between "B" and "C" batteries are assumed to be related to the addition of Vesprin to the treatment, and changes during the interval from "C" to "D" battery seem to be primarily influenced by the removal of the special diet. The changes during the interval from "D" to "E" are based on the use of Vesprin by itself, but with the patient on the cottage rather than on a hospital ward.

It will be noted that on the measures of IQ the greatest growth appeared during the combination of diet and Vesprin ("B" to "C"), this was also the period of greatest testability. From the Vineland Scale it will be noted that the greatest growth also appeared during the period "B" to "C" and that there was later a falling off with discontinuance of the special diet. This would seem to indicate, at least from the point of view of psychological performance, that the combination of tranquilizing medication and the special diet produced the best results. The psychological examiner reported that during the administration of the later batteries, however, he seemed alert and active, that his activity and attention seemed more purposefully directed, and that there seemed to be continuing improvement in his general relationships

TABLE IV

CHANGES IN TEST RESULTS DURING INTERVALS

	Before to B		*B to C*		*C to D*		*D to E*	
	MA OR AE	IQ OR SQ	MA OR AE	IQ OR SQ	MA OR AE	IQ OR SQ	MA OR AE	IQ OR SQ
CMMS	–4 mo.	–5	+2 mo.	+1	–10 mo.	–9	+1 mo.	+1
DAP	3-3 to N.D.	34 to N.D.	N.D. to 3-6	N.D. to 34	0	0	0	0
VSMS	–21 mo.	–20	+13 mo.	+11	+10 mo.	+7	–12 mo.	–10

Note: Since the subject was untestable during period "A," we have omitted it from this comparison.

even though, as measured by psychological performance, he ceased to develop at the rate previously recorded. Thus, with the change from special diet to regular diet there was again a slight deterioration in intellectual performance but with a continued increase in function, as measured by the VSMS *(Table III, "D")*. The general frequency of incident reports and negative ward behavior reports fell off considerably. Removal of the special diet seems to be associated with mixed indications, in that the social quotients showed major gains but IQ's showed some losses although improvement in testability was present. After the removal of the special diet there seemed to be more destructibility and aggressiveness. Thus, we might conclude from this that the combination of Vesprin and Enal could be the treatment that brought about the major change in behavior. This, of course, is an indefinite conclusion to be drawn from the study of one case and one whose diagnosis is not even clear, so that generalized conclusions cannot be made. However, it does seem apparent that the diet did have some effect in these instances. It can probably be safely concluded that the special diet contributed little however toward higher intellectual functioning, though it did contribute to the improvement in the behavioral functioning. The major question surrounding this whole matter is whether or not the Vesprin would have accomplished this without the diet, and the sequence of events seems to indicate that it would not. However, once the uphill in behavior was started then the presence or absence of diet seemed to have made no major difference. In this sense we could say that the diet may have served as some form of activator which should be researched more fully.

Parsons State Hospital and Training Center
Parsons, Kansas

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Mental Retardation

(Continued from page 389)

remained unchanged in 43 children as may be seen in the following tabulation:

Serum Alkaline Phosphatase Levels (Bodansky Units)*		*No. of Patients*		
BEFORE THERAPY	AFTER THERAPY	MALE	FEMALE**	TOTAL
3	3	14	15	29
3	6	5	2	7
3	12	1	0	1
6	3	5	13	18
6	6	12	2	14
6	12	3	2	5
6	22	1	0	1
12	3	1	1	2
12	6	9	5	14
22	6	0	1	1
Totals		51	41	92

* Normal ranges of alkaline phosphatase: Adults 2-4 units, children 5-15 units.
** Values were not determined in 4 girls.

Comment

The results obtained with Vesprin in this study are quite impressive. To anyone familiar with the management of institutionalized mentally deficient patients, any increased accessibility, as the result of alleviation of care problems, is a distinct advantage in accelerating treatment, training and rehabilitation. The fact that treatment of these patients with Vesprin for the relatively short period of three months reduced or eliminated some of their abnormal behavior characteristics suggests that Vesprin will prove to be a very useful drug in the care of mentally deficient children. Study of Vesprin is continuing at this institution and present indications are that the above impression will be borne out. Comparatively few side effects were seen.

Parsons State Hospital and Training Center
Parsons, Kansas

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The Electroencephalogram

Its Value in the Clinical Management of the Epileptic Patient

CHARLES M. POSER, M.D., ***and***
RONALD A. YOUMANS, M.D., ***Kansas City***

EPILEPSY IS A DISEASE which still has a certain aura of mystery today even in the mind of the physician. It is possibly for this reason that the popularization of electroencephalography as a routine diagnostic study has met with such overwhelming enthusiasm by physicians faced with the problem of managing an epileptic. There can be no doubt that the introduction of this technique has helped considerably in the investigation of neurophysiological phenomena, of which the epileptic discharge is one form, and that it will continue to prove a valuable research tool. From the point of view of the clinician, however, certain sobering thoughts concerning its value are in order.

Records Cranial Activity

The electroencephalogram is nothing more than a device which records, in a rather crude way, spontaneous electrical activity originating within the cranial cavity. No one knows exactly what the origin of the different types of electrical discharges is or what is their absolute clinical significance. The electroencephalogram is often confused with the better known electrocardiogram in terms of accuracy and clinical correlation. Nothing could be more misleading. The two are simply similar devices based upon the same recording principles, and that is where the resemblance ends.

The value of the EEG in localizing even gross intracranial pathology is not the subject of this discussion, but it is worthwhile noting that even under the most favorable conditions, and in the best series, it will correctly identify the site of the lesion in only about 60 per cent of the cases.[1]

We are concerned here with the value of the EEG in diagnosis and management of the patient with epilepsy and epileptiform disorders. It is extremely easy to make the diagnosis of epilepsy. For the purpose of this discussion we will not quibble about what is and what is not epilepsy. Suffice it to say that a convulsion, regardless of etiology, should be considered a symptom of epilepsy provided such obvious causes as meningitis, hypoglycemia, etc. have been ruled out. A convulsion never gives any indications concerning its etiology, and after Gertrude Stein it might be said that "a convulsion is a convulsion is a convulsion." That the diagnosis of epilepsy must almost always be made strictly on the basis of a description given by the patient, or preferably by an eyewitness is a well-known fact.

The patient with positive neurological signs is no longer a patient with simple epilepsy and deserves a complete neurological investigation. Epilepsy may be the first sign of an underlying brain tumor, a vascular anomaly, a brain abscess, or a cerebral injury. Fortunately, the electroencephalogram is only in the rarest instances the single additional study performed on a patient suspected of such an underlying lesion.

The patient who has a convincing history of convulsive seizures as a rule does not need an electroencephalogram, unless an underlying organic lesion is suspected. The old rule of thumb that a convulsive disorder starting after the age of 25 is due to a

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In the great majority of cases of simple epilepsy, the electroencephalogram serves no useful purpose. On the contrary, the information obtained from its interpretation may lead astray from sound clinical evaluation and judgment and actual harm to the patient may result from mismanagement. It is the patient that must be treated, not the electroencephalogram.

The real clinical value of the electroencephalogram comes mainly in the study of the many cases of borderline epilepsy or epileptic equivalent wherein such laboratory confirmation of clinical impression can prove to be extremely useful.

Read in part at the Western Institute for Epilepsy, Denver, October 31, 1958. From the Section of Neurology, Department of Medicine, University of Kansas Medical Center.

brain tumor until proven otherwise has never lost its value. We are, therefore, concerned with the vast majority of patients who have what is euphemistically referred to as idiopathic epilepsy. In those cases it is often the duty of the electroencephalographer actually to "protect" the patient from his electroencephalogram. Repeated studies have shown that 10 to 15 per cent of normal controls have abnormal electroencephalograms while conversely, as many as 20 per cent of patients with undeniable convulsive seizures have normal records on repeated examination. The controversy about what constitutes the normal electroencephalogram has yet to be resolved. This latter problem is even more severe in the case of children, whose records are always difficult to interpret even in the hands of the most experienced electroencephalographers.[2-7] In many instances the patient is actually denied indicated anti-convulsant treatment because he is unfortunate enough to have a normal EEG. It cannot be overemphasized that the treatment of epilepsy is based on the *clinical* evidence of the disease, not on the basis of the electroencephalographic changes.

It should also be emphasized that since the EEG is a crude device recording a variety of electrical manifestations originating from many different points in the brain, there can be no rigid criteria to govern the interpretation of the records. Many schemes to that effect have been suggested and employed but none have proven to be satisfactory.

Lacks Rigid Criteria

The interpretation of EEGs is, because of the lack of rigid criteria, a highly personal matter, based upon the degree of training of the interpreter, his experience, his knowledge of the clinical situation, and many other intangible factors. An interesting study which points out the dangers of blind faith in EEG interpretations consisted in submitting the records of 10 patients referred to a laboratory of electroencephalography for routine study, to five different, experienced electroencephalographers. The percentage of agreement of the five on the 10 records was only 40 for the presence or absence of pathology indicators, only 30 for localization and only 10 for the combined categories of localization and pathology.[8]

Since so many epileptics are children, it should also be kept in mind that the electroencephalographic pattern changes, or matures if you will, with growth and that changes in it may be perfectly "physiological" and completely without clinical significance.[6, 7] This is too often overlooked in the desire to "follow" the patient with serial EEGs. It was believed at first that there are specific types of electrical discharges associated with specific clinical types of epilepsy. Thus, many believed, and still do, that the presence of paroxysmal bursts of three per second spike-dome discharges was pathognomonic for true petit mal. It is true that this type of electrical discharge is frequently, certainly not always, present in the EEGs of patients with true petit mal, but the reverse is certainly not true, since many patients with convulsive disorders of the grand mal type and even some normals may show the same EEG abnormality.[9]

Thus, in most instances, the EEG will be of no use in determining the type of epilepsy present or the kind of medication which might be best suited for its control.

It has been shown repeatedly that there exists no correlation between the severity of the clinical disease and the degree of abnormality present in the EEG, even when such an abnormality is present. Thus, a patient who has had but a single convulsion may have frequent paroxysmal discharges of multiple spikes, while the patient with severe, frequent convulsions may show some mild slowing in the temporal leads. It is true to a certain extent that the severity of the EEG abnormality may give some indication concerning the probability of medical control, but the number of such instances is too low to permit extension into a general rule.[10]

Misinterpretations Can Occur

Of even greater importance is the fact that abnormalities of the EEG are often misinterpreted by the physician who actually takes care of the patient. The presence of an electrical focus does not necessarily mean the presence of an underlying brain tumor in the same way that its absence might be taken as indicating that a brain tumor is not present. Too many children with epilepsy who have a focal abnormality of the EEG are subjected to pneumoencephalography or cerebral angiography on the sole basis of such a report. A recent study has shown conclusively that such focal abnormalities in children have little, if any, significance, since the location or even the presence of such a focus may vary from day to day.[6, 11] Here again it should be stressed that the electroencephalogram can never replace the clinical neurological examination. The EEG is nothing more than a laboratory test and must be used as such and no more, to support clinical impressions based on history and physical examination.

Many clinicians still believe, or one might also say, hope that the EEG will give them an objective means of following the progress of their patients, and perhaps give them an indication about when the medication can be safely stopped. Here again the actual facts are disappointing. Medical control of epilepsy is poorly correlated with EEG findings. In addition to the epileptic patients whose EEGs are always normal, a certain number, varying between 35 per

cent and 60 per cent, will show some improvement of the EEG pattern towards the normal. On the other hand, the remainder of the patients will show no change—some will even have a worsening of the EEG, in spite of excellent medical control of the seizures. Here again, physicians often fail to keep in mind not only the normal daily variations of the EEG, but also the fact that the electrical pattern changes with age, especially with the growth of the child to adulthood. The belief that anti-convulsant medication affects the EEG was the basis for discontinuing medication abruptly 24 or 48 hours before the actual test. Fortunately this practice has been almost universally abandoned since it only resulted in provoking status epilepticus without affecting the EEG one iota, one way or the other.[12, 13]

It is clear that in day to day clinical practice obtaining an electroencephalogram is not an indispensable part of the work-up of the epileptic patient. Aside from purely medical considerations, the financial aspects should also be kept in mind. The EEG is usually a fairly expensive procedure and in many areas long distances have to be traveled to reach an EEG laboratory.

Its Value

Thus far, the fact that the EEG is largely unnecessary in cases of *overt* epilepsy has been stressed. There are, however, times at which such an examination can be of considerable value. Such situations can be summarized by stating that the EEG may be a valuable diagnostic aid in cases where the diagnosis of epilepsy cannot be clearly established. These are not rare by any means. We are learning to recognize more and more "epileptic equivalents" every day, especially in the child and adolescent. The electroencephalographic study of children with behavior disturbances of all kinds and the recognition, partly on the basis of EEG findings, that such disturbances may be epileptic equivalents has helped in obtaining medical control of such children by the use of anticonvulsant medications.[7] Epileptic equivalents may assume the most bizarre clinical appearances: from the vertiginous attack to the episodic abdominal cramps, from the short episode of confusion to the recurrent migraine-type of headache. Syncopal attacks, mental dullness, temper tantrums, maladjustments to school or family situations, attacks of vomiting, attacks of fright, and many other obscure clinical symptoms may, when subjected to electroencephalographic examination, be revealed to be associated with cortical dysrhythmia. In such situations, the patient should be tested on the *basis* of his EEG.[16-20] Finally, in some patients with overt epilepsy, the EEG will provide valuable information when, after prolonged and thorough attempts at medical control of seizures have failed, the possibility of surgical ablation of an epileptogenic focus is being considered. Repeated tracings with consistent focal signs will give the neurosurgeon objective evidence necessary for his intervention.[22]

Department of Neurology
University of Kansas Medical Center
Kansas City 12, Kansas

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Postpartum-Postoperative Hypotension

The Diagnosis and Newer Concepts of Management

MELVIN A. ROBLEE, M.D., ***Clayton, Missouri***

THE OBSTETRICAL AND GYNECOLOGICAL literature of the past two years and the first three months of this year focuses our interest on the hypotensive state as a serious condition. Hypotension has a dual role, as a clinical sign and symptom and also as an etiological factor in producing new and continued sequelae resulting in tissue death. To combat the condition causing the hypotension before it can produce new damage is our chief concern and requires our every effort.

For this reason a review of the literature as well as a review of our own clinical experiences may prove to be of value. First we may refer to some of the old and ever present problems before we attack those newer and complex problems caused by steroid therapy and electrolytic imbalance from the prolonged administration of antihypertensive drugs, diuretics, and cortisone therapy. Gram-negative bacterial shock, the new concern of the maternal welfare committee, has moved into the important role once held by hemorrhage and toxemia as one of the chief causes of maternal fatalities.

Adrenohypophyseal failure and renal failure as a postpartum or postoperative complication are to be prevented by more active intervention and precautionary measures. It is the responsibility of the obstetrician and gynecologist to know what medication the patient has been receiving before delivery or surgery just as he must know the type of anesthesia given and the postpartum or postoperative medication which is to be given.

Simplest Causes

Some of the simplest causes of hypotension result from

A. POSTURE: lying supine
   Pressure Hypotension:
   Compression of inferior vena cava interfering with blood return to right side of heart.
   1. Large flaccid near term uterus without contractions[1]
   2. Large size ovarian cyst
   3. Large myoma

   The collateral channels of circulation (vertebral and lumbar systems) help to return the blood when the inferior vena cava is compressed.

B. REFLEX HYPOTENSION
   1. Dilatation of cervical, endocervical canal without anesthesia
   2. Traction on fixed cervix while performing a complete abdominal hysterectomy
   3. Rectal pressure

A review of the subject of hypotension is presented. Hypotension from loss of circulating blood volume is evaluated. Some postoperative dangers from excessive preoperative medications such as diuretics, antihypertensive drugs, and cortisone are noted. The prompt emptying of the uterus to eliminate the infected material is necessary in the control of hypotensive Gram-negative endotoxins. To prevent severe hypotension, conservative obstetrics is recommended.

C. VASOMOTOR HYPOTENSION
   1. Fright with anxiety state
   2. Caudal anesthesia
      (blood pooled in leg veins and muscles)
   3. Saddle or spinal anesthesia
   4. Antihypertensive drugs

Most cases of severe hypotension are related to the decrease in circulating blood volume from internal or external hemorrhage. The formula of blood volume: plasma volume $\times \frac{100}{100\text{-}0.95}$. Hematocrit may be misleading for females since their blood reserve pools are of less volume than the corresponding areas of the male. The young woman is also able to constrict the peripheral circulation to maintain a relatively good blood pressure despite decreasing blood volume. Blood pressure may not fall until 30 to 35 per cent of the blood volume is lost by hemorrhage. This really means that any patient in shock from hemorrhage needs 1500 cc of blood given rapidly. Experimentally, when the

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blood volume remains below 50 per cent of normal for a period longer than four hours, the response to therapy diminishes as the tissues lose their ability to recover even when normal blood volume is restored by transfusion. Moreover, the body becomes refractory to blood replacement in the presence of recurrent bleeding in the obstetrical patient.[2]

Blood Volume Circulation 5000 cc
2750 ml. of blood plasma
2250 ml. of red blood cells

5000 ml. of blood for males

4000 ml. for average females

Blood volume is less because of smaller muscle structure and more fat tissue[3]

Blood reserve pools are
1. Leg veins and muscles of legs and thighs
2. Thoracic vessels and lung tissue

Blood Flow

Blood flow probably is a more accurate criterion of shock than blood pressure. Cardiac output declines well before the blood pressure falls from hemorrhage or trauma.

Clinical Estimations of Reduced Circulation

Objective methods are not always practicable. Reliance must be placed on clinical signs of reduced circulation as criteria of impending "shock" hypotension. Reduction of blood pressure and lower RBC counts follow later.

The rate of recovery of the patient while receiving and after the blood transfusions of volume equal to that lost by hemorrhage, *indicates* not only whether the hemorrhage is controlled, but also the severity of damage to capillary permeability, adrenals and kidneys.

Defects in blood clotting. The patient with afibrinogenemia and toxemia especially with abruptio placenta continues to bleed even with adequate replacement of blood.

Recovery Room Problem

In order to understand better the problems of the recovery room, the operator should always check the postpartum and postoperative patient personally. He should never leave the hospital until he has satisfied himself that there is no serious problem of hypotension.

Recovery Room Evaluation of Hypotension

Comparison of preoperative and postoperative blood pressure as to normal status of blood pressure for this case.

A. Physiological position change such as:
Lowering the legs
Raising the head
Dropping the patient onto the bed
Residual from spinal anesthesia

B. Neurogenic—vagal stimulation

C. Pharmacological
Depression from opiates, barbiturates, tranquilizers, etc.
Iatrogenic effects from:
1. Reserpine medication
2. Steroids producing adrenal suppression
3. Antihypertensive drugs
4. Pitocin with cyclopropane or pentothal anesthesia
5. Citrate intoxication with multiple transfusions
Give calcium to offset citrate effect
6. Excessive forced CO_2 ventilation with acidosis from lowered O_2 saturation while anesthetized
7. Abnormal sensitivities, allergies
8. Diuretic drugs with sodium, potassium loss
9. Electrolyte loss with fluid transferred from circulation to bowel
10. Acute dilatation of the stomach
Gastric suction. Watch for regurgitation and aspiration

Recognition and Treatment for Hypotension Postoperative

1. Blood loss, external or internal
2. Pulmonary embolus
3. Myocardial infarction
4. Cerebral vascular accident
5. Atelectasis and other insults to physiology and anatomy to produce shock[4]
6. Secondary bleeding, usually internal

Cardiac Arrest

The problem of cardiac arrest is reviewed by Dr. V. J. Collins in which he deplores the rash of thoracotomies occurring in the emergency rooms, medical wards, and ambulances. He describes cardiocirculatory collapse as a culmination of persistent derangements in physiology rather than a "bolt out of the blue."

In a recent article by Dr. Phil Hitchcock it is pointed out for evalulation that patients with adrenal suppression should be anesthetized with a combination of pentothal sodium and curare intravenously with nitrous oxide oxygen inhalation. Ether ordinarily stimulates the release of the adrenal hormones and thus might further exhaust the depleted glands if used in large dosage.

Since cortisone decreases the production of ACTH, it is urged that 100 mg. ampules of hydrocortisone be kept in the operating room at all times for patients who have received cortisone preoperatively. Such pa-

tients stand blood loss poorly and immediate replacement of blood is necessary.

Dr. E. Stewart Taylor lists acute adrenal cortical failure as a cause of shock and death in apparently normal, healthy individuals before surgical operations or when other stress is encountered. He lists the following:

Diagnostic Signs, Symptoms of Postoperative Acute Adrenal Cortical Failure

1. Delayed shock unresponsive to blood replacement
2. Shock unrelated to depletion or preoperative anemia
3. Marked hypotension
4. Rapid pulse
5. Cyanosis of fingers, toes, neck, and face
6. Profuse diaphoresis (cold sweat)
7. Pain and tenderness above the kidney area
8. Extreme thirst
9. Hyperpyrexia
10. Mental confusion-disorientation-coma
11. Oliguria or anuria
12. Cold and clammy skin
13. Elevated BUN
14. Increased serum potassium
15. Decreased serum sodium chlorides
16. Albuminuria

Unexplained Blood Pressure Drop

To combat the acute unexplained fall in blood pressure when the blood volume flow has been corrected and the cause of the hemorrhage stopped, the use of vasoconstrictor drugs is to be considered. Vasoxyl (methoxamine HCl), 10 to 50 mg., 20 mg. per cc, and Neo-synephrine (phenylephrine HCl), 50 to 500 mg., 10 mg. per cc, are usually quick in response and effective, but when there is extensive damage, the longer acting intravenous catheter-administered Levophed-L is desirable. It is well to have in mind that a falling blood pressure occurring some 24 to 48 hours after surgery may be due to ileus when the serum potassium levels fall as a result of potassium and sodium loss from excessive sweating, vomiting, and in some cases, excessive preoperative administration of a diuretic. Add to this a possible suppression of the adrenals from trauma, strain, and a preoperative administration of cortisone and a fatal or near-fatal complication results.

Dr. Robert M. Dean and Dr. Keith P. Russell in their recent extensive report on the subject of "Bacterial Shock in Septic Abortion" review the current literature as well as present a series of 27 cases of enterobacillary septicemia. Norepinephrine (levarterenol bitartrate four to 40 cc 0.2 per cent solution) is the first choice of many observers treating the bacterial endotoxic cases of hypotension. These gram-negative bacilli septic shock cases usually have hemoconcentration from inadequate fluid intake or fluid draining from the intervascular to the extravascular cavities such as the stomach and small intestines.

To differentiate bacterial endotoxic shock from an electrolytic imbalance, cervical and uterine cultures as well as blood cultures are to be taken. Since these cases require immediate treatment, a smear is taken and a gram stain made and the report on the culture serves as confirmation and a guide in selecting the dosage of the antibiotics which are to be continued.

Septic Abortion

In cases of septic abortion with retained necrotic placental pieces or in cases of chorioamnionitis and placentitis, prompt emptying of the uterus is necessary as antibiotics can not be effective in these walled-off abscess-like cavities. Furthermore, toxic substances liberated from dead tissue coupled with gram-negative bacilli act synergistically to damage renal tubules, producing lower nephron nephrosis, and the generalized reaction of acute hypotensions, cerebral edema, pulmonary congestion, and edema.

For some years in the St. Louis Maternity Hospital, we have practiced completing incomplete abortions by gentle, but complete removal of placental tissue with infected decidua. We have observed few cases of peripheral vascular collapse when prompt emptying of the uterus has been carried out and blood transfusions equal to the amount lost by hemorrhage have been given before septic shock had a chance to develop to any serious degree.

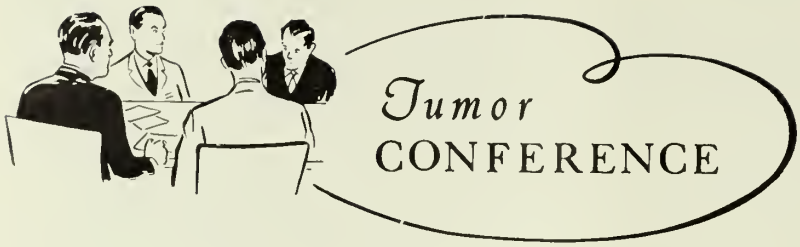
Endotoxin Shock

Dr. Donald G. McKay and Dr. Duncan E. Reid have reviewed the subject of endotoxin shock and Shwartzman Reaction in Pregnancy.

Generalized Shwartzman Reaction in Endotoxin Shock in Pregnancy

1. Infected abortion
2. Premature rupture of membranes with chorioamnionitis, placentitis, bilateral renal cortical necrosis (associated hypophysis necrosis)
   Bilateral cortical necrosis poorer prognosis than tubular necrosis of the kidney
3. Endotoxins effecting central vasomotor paralysis produce hypotension
4. Waterhouse-Friderichsen syndrome, adrenal cortical failure due to sepsis
5. Endotoxins effecting central vasomotor paralysis
6. Jarisch-Herxheimer reaction, altered hemodynamics of the liver resulting in hypotension

(Continued on page 403)



Sarcoma Botryoides in a Two Year Old Boy

Edited by HARRY L. MANNING, M.D.

Dr. Hardin (Moderator): The patient we are to discuss today is of unusual interest both because of the nature of his lesion and because of the problems involved in his management. Will you present the history of this case, Dr. Lasley?

Dr. Lasley (Resident): The patient was a two year and three month old white male child who was admitted to the G. U. service of KUMC because of obstructive uropathy. His mother stated that approximately three months before his admission here she had taken the child to her local physician because his scrotum was swelling intermittently and his navel was blue. He was examined at that time and no abnormalities were found. Shortly after this the patient began voiding with a poor stream and having nocturia six or eight times a night. He also had hesitancy and would cry out when he needed to void. He was then referred here and on examination he was seen to be a fairly well-developed young boy. The significant physical findings were a palpable, soft, smooth, fairly large mass in the pelvis on rectal examination and enlarged nodes in the left supraclavicular area, measuring about 2 x 3 cm. There was no scrotal swelling, but a bluish color of his navel was noted. A urethral catheter was inserted and the pelvic mass failed to disappear. He was found to be anemic, having a hemoglobin value of nine gm. per cent. The white count and differential were within normal limits. His urological work-up included an intravenous pyelogram and a cystogram. A cystoscopy and panendoscopy were attempted but because of the mass in the pelvis, the attempts were not successful.

Cancer teaching activities at the University of Kansas Medical Center are aided by grants from the National Cancer Institute, U. S. Public Health Service, and from the Kansas Division of the American Cancer Society. Dr. Manning is a trainee of the National Cancer Institute.

Dr. Hardin: May we see the results of these x-ray studies at this time?

Dr. Davidson (Resident): The intravenous pyelogram shows a grade three or four caliectasis of the right kidney. At no time during the one hour study was the left kidney visualized as far as the collecting system was concerned. A cystogram, as stated, was performed and this reveals the retention catheter lying above a filling defect at the base of the bladder which appears to elevate the bladder up out of the pelvis *(Figure 1)*. The radiographic inter-

Figure 1. Cystogram demonstrating elevation of urinary bladder.

pretation of this mass would be either a large ureterocele or a tumor mass at the base of the bladder. Therefore, there is radiographic evidence of obstructive change in the form of an advanced hydronephrosis with the obstruction apparently due to a mass residing at the base of the bladder.

Dr. Hardin: Dr. Foret, would you tell us what your clinical impression was at this point and how you managed this case.

Dr. Foret: In view of the history as it has been described and with the finding of a mass at the base of the bladder producing hydronephrosis and lymphatic blockage leading to scrotal swelling and the finding of enlarged nodes in the left supraclavicular area, we felt the most reasonable diagnosis was sarcoma botryoides, but also considered the possibility of a lymphoma. The nodes in the neck were biopsied and we were returned a diagnosis of metastatic malignancy, probably a sarcoma. We felt then that the main lesion most probably was a sarcoma botryoides involving the bladder. While this is a rare condition, it is second in frequency to the Wilms' tumor among malignancies of the urogenital tract in patients of this age. In infants and children this tumor is much more rapidly growing and metastasizes more widely than in adults. Children, on the average, live only about three months after the onset of symptoms, whereas the adult generally lives about one year after symptoms appear.

Had there been no evidence of metastasis our treatment would have consisted of a radical removal of the involved organs along with node dissection of the area and then provision for urinary drainage, perhaps by uretero-sigmoidostomy or an ileal conduit. However, since there was evidence of metastasis, we believed that nothing could be accomplished by way of surgical removal of the mass and our treatment was to make provision for urinary drainage and we then sent the child home. Several weeks after returning home, the child died. An autopsy was performed and the specimen sent to us.

Dr. Hardin: Dr. Mantz, will you present the results of this autopsy, please?

Dr. Mantz: The pelvic lesion indeed was a sarcoma botryoides, and we are privileged to see it because of the kindness of the alert physician who performed the autopsy and sent us this rare tumor for our study. I would like to point out certain features for you to observe as you examine the gross specimen. You will notice that the specimen consists of the pelvic organs *(Figure 2)*. On one aspect there is urinary bladder with the tumor mass extending upward from the posterior inferior wall nearly obliterating the lumen at the vesicle neck and presenting into the bladder lumen as polypoid masses. The urethra is heavily infiltrated by tumor tissue which has a

Figure 2. Gross appearance of pelvic organs showing tumor involving the prostate and vesicle neck with polypoid masses projecting into lumen of urinary bladder. Arrow points to urethra.

gray-white, fleshy appearance. The septum between the bladder and the prostate also is heavily infiltrated by tumor and the prostate appears to be totally engulfed by the lesion.

Looking at the other side we see what appears to be a portion of the rectum adherent to the bladder and we note that this too has been invaded, presumably by direct extension of the growth, involving the mucosa which is thrown up into grape-like masses due to edema of the tissue. The structure is typical of sarcoma botryoides and it is because of the polypoid nature of the growth that the term botryoides, meaning grape-like, is applied. Therefore, we can make the pathologic diagnosis with a high degree of certainty just on the gross appearance alone.

Turning our attention now to the microscopic features of this lesion, within the bladder we again see the decidedly polypoid structure so characteristic of this growth. Large grape-like masses project out into the lumen. There is extensive infiltration of the wall and engulfment of the muscularis. We see that the tumor is made up almost exclusively of small spindle type cells which exist in a relatively loose and myxomatous type of matrix *(Figure 3)*. These cells do not show great pleomorphism and in this

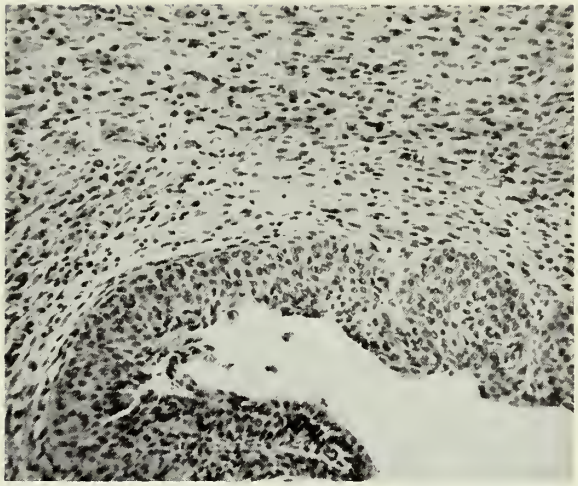


Figure 3. Photomicrograph of tumor invading wall of urinary bladder, showing spindle cells loosely arranged in a myxomatous matrix. ×180, reduced about one-fourth.

area the lesion could be classified simply as a so-called "spindle cell" sarcoma. There are features here, however, which I think permit us to go further. There are some cells in the area of the prostate that are elongated and strap-like, a feature which immediately suggests the possibility of striated muscle origin. We also see cells which are multinucleated and rather gigantic *(Figure 4)*. Striations can be demonstrated in a number of these cells when examined by means of special stains, and so without reservation, I think we can state that the tumor fundamentally is a rhabdomyosarcoma.

The source of these lesions is not readily appreciated. There are two general schools of thought. One suggests that the neoplasm is derived from the striated muscular investment about the prostate and vesicle neck in the male or, in the female, about the vesicle neck and the cervix. There is another school of thought, however, which suggests that these are mixed mesenchymal tumors; that they originate in the primordial mesenchyme which has the capacity of forming many different tissues, including fibroblasts, smooth muscle cells, striated muscle cells and cartilage. The mesenchyme from which the urogenital tract is derived is even more specialized than that of connective tissues elsewhere and may give rise to epithelial structures.

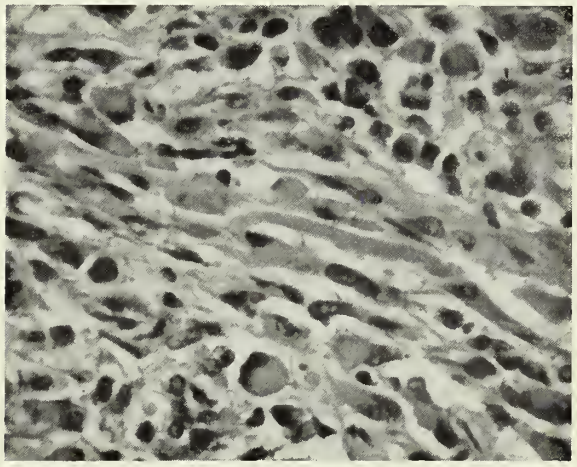


Figure 4. Photomicrograph of tumor in area of prostate. Note strap cells and large giant cells. ×380, reduced about one-fourth.

Contrary to most sarcomas, lesions of this type are strongly disposed toward lymphatic as well as venous metastases. So it was in this case which showed extensive involvement of abdominal lymph nodes as well as the liver. Within the liver metastasis we find a feature which suggests that this neoplasm is not primarily of striated muscular origin but is derived from a urogenital type of mesenchyme. There are some tumor cells in this metastasis which have achieved a distinctly epithelioid appearance *(Figure 5)*. They are decidedly gland-like in their arrangement and form a tube-like structure. The microscopic appearance of this lesion is very similar to that seen in the lesion which we call Wilms' tumor, or so-called adenosarcoma, which now is well known to be of urogenital, mixed mesenchymal origin. I believe the demonstration of this change in the liver metastasis is good histologic evidence that the primordial mesenchyme is the pathogenetic source of this type of neoplasm.

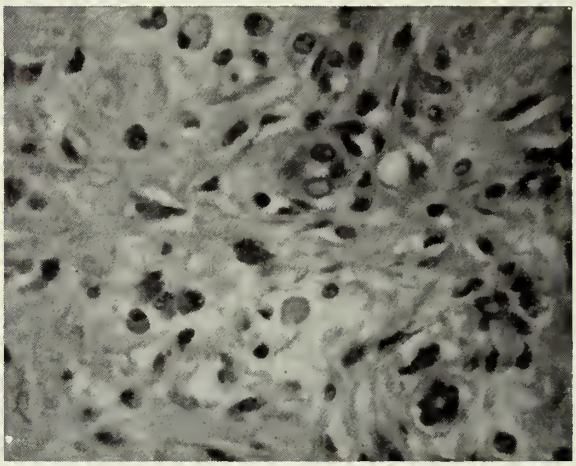


Figure 5. Photomicrograph of metastasis in liver showing group of cells just above center arranged in a pattern suggesting gland formation. A similar group of cells in right lower area of field may be a bile duct. ×380, reduced about one-fourth.

Dr. Hardin: Dr. Foret, what are the early symptoms that might lead one to suspect the presence of this condition?

Dr. Foret: The earliest symptom usually would be the development of obstructive uropathy.

Dr. Hardin: How would this lesion respond to radiation, Dr. Tice?

Dr. Tice: It would respond quite well temporarily, but metastases occur widely.

Dr. Mantz: I think it should be pointed out that although sarcoma botryoides is seen most commonly in the young individual—70 per cent of the cases occurring in the pre-teenage group and 30 per cent being in children below four years of age—it may occur also at the other extreme of life, about 30 per cent of the cases being in individuals 50 years of age and over.

Dr. Hardin: It is pointed out in the literature that there is a great proclivity for this tumor to metastasize via the lymphatics, the lympatic drainage of this area being the hypogastric and iliac-aortic channels. When you contemplate the surgical treatment of this problem, it really encompasses an heroic type of surgery. Then we are told that benefit from radiation therapy is usually only temporary. The usual course is recurrence because of widespread metastases through the lymphatic system. Therefore, any hope of cure depends on very early diagnosis.

This case today has provided us with some very interesting clues regarding the histogenesis of this neoplasm. It also should have taught us to be alerted to this diagnosis if we encounter a young individual with obstructive uropathy, but we must not forget that it can occur in older individuals as well.

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Postpartum-Postoperative Hypotension

(Continued from page 399)

Renal Failure

The related subject of acute renal failure from hypotension becomes a real problem in obstetrical complications. Dr. Robert C. Knapp and Dr. Louis M. Hellman report 23 patients with a survival of 12. They list the following physiological considerations:

1. Partial replacement if the blood volume is greatly depleted from hemorrhage
2. Active treatment of the hypotension for as long as it is necessary
3. Restriction of fluids to the minimum
4. High fat and carbohydrate calories to prevent tissue break-down and the release of potassium
5. Later if there is a diuretic phase, water and electrolytes must be supplemented

The elevated potassium changes to low levels along with the low sodium in the general depletion of electrolytes after the kidney tubules resume their function. The treatment is essentially the same as the treatment in anuria for incompatible blood transfusion. In each phase the shock and hypotension must be combatted.

The management of acute renal failure is identical whether the cause be hypotension, incompatible blood transfusions, or toxins.

101 S. Meramec
Clayton St. Louis 5, Mo.

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Despite anti-speeding campaigns that were conducted in many parts of the United States during the the past year, nearly 1,000,000 men, women and children were 1959 victims of the fast driver.

A recent statistical report describing what happened on our highways during 1959, stated that drivers exceeding the speed limit were involved in 43.1 per cent of the fatalities while speeding drivers figured in 38.8 per cent of the traffic injuries.

Of the 37,600 traffic deaths during the year, 12,980 were the direct result of drivers exceeding the speed limit. No other single action of drivers was even close to the grim record of speed.

Cited as causing 4,790 deaths during 1959 were the drivers on the wrong side of the road. Their mistakes accounted for 15.9 per cent of the death toll. The driver who did not have the right of way caused more than half a million people to suffer injuries—22.8 per cent of the injury toll.

In this highway safety report it is told that more than 900 additional deaths occurred on our highways during 1959 as compared with the preceding year. Injuries soared to 2,870,000 reflecting an increase of nearly 50,000.

The Business Side of Medicine

Bonds, Doctors, and Savings

LORIN E. SIBLEY, ***Topeka***

Because the medical profession has made extensive use of Savings Bonds in personal investment programs, and because the medical profession has traditionally been active in support of the Savings Bonds Program, the profession stands high among the estimated 500,000 Kansans who are Savings Bonds owners and who now own an estimated $900,000,000 in United States Savings Bonds.

Improvements coming both through legislation and through recently announced opportunities make Savings Bonds even more attractive than when Kansas ownership records were made.

One might conclude that the June 1, 1959 increase of all Savings Bonds interest rates by at least ½ per cent and the increase to 3¾ per cent on all new Savings Bonds purchases is the most important change.

However, other considerations appear to be important also if one reviews questions that are frequently asked. Most of the questions are asked from the personal investor point of view with the questions which follow appearing regularly in Savings Bonds discussions.

Q. Under current conditions, would it be smart for me to buy U. S. Savings Bonds?

A. The 3¾ per cent interest rate answers this question in part—and the fact that few if any other investments provide the "locked in" virtues would seem to continue to make Savings Bonds a smart investment.

Q. What are these virtues?

A. Savings Bonds are indestructible, which means that they will be replaced if lost, stolen, or destroyed. Series E Bonds, which are redeemable two months after issue date, are readily converted into cash. Both redemption value and earning rate of Savings Bonds is guaranteed, and never fluctuates. Through the extension privileges, one's investment in Series E Bonds can be continued automatically and without attention.

Q. Do all Series E Bonds have the extension privilege?

A. Yes, the extension privilege has been promised on all Series E Bonds.

Q. I have a Series E Bond purchased in 1941 which reaches the end of its second extension in 1961. Will it automatically re-invest itself?

A. Yes. The $100 Bond you bought in 1941 cost you $75.00. That Bond reaches its second maturity in 1961 at a value of $134.52. The $134.52 will automatically re-invest itself for another ten years without any action on your part.

Q. Would I be ahead to cash my old Bonds and re-invest in new ones?

A. Almost without exception the answer would be "NO." This is true both of Series E and Series H Bonds.

Q. In what ways do the Series E and the Series H Bond differ?

A. The Series E Bond is what might be called a "capital accumulation" bond, since its interest is added to the face value of the Bond. The Series H Bond is a current income bond with its interest being paid twice each year by Treasury check.

(Continued on page 411)

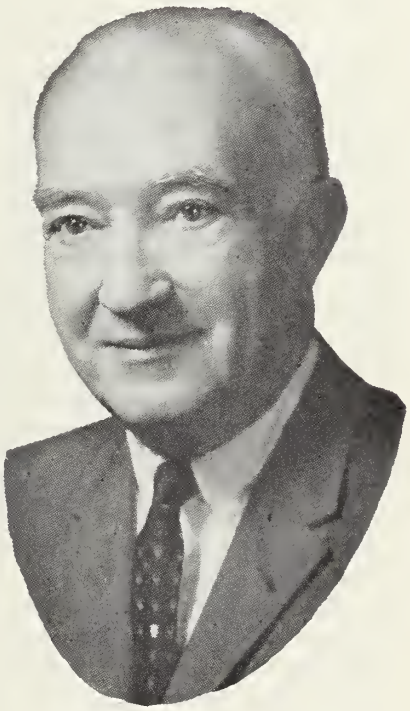
This article was prepared by Mr. Sibley who is State Director of the Treasury Department—U. S. Savings Bonds Division, Topeka, Kansas.

The President's Message

Dear Doctor:

Having received reprint permission from *Time* magazine, I felt this article which was printed in *Time*—March 7, 1960, Volume LXXV No. 10, page 47—was of importance to all of the medical profession. Though this article is somewhat humorous in its presentation, it brings out a point of fact which must be faced. Are these articles, some of which are more accusing than others, propaganda for support of Federal Legislation or are they for re-examination by the medical profession as a point of better public relations. Let us not be lulled into an apathetic state and say it is just bad publicity which will be forgotten. Let's make an effort to do something about it. Suggestions are always acceptable.

THE LIMITED SPECIALIST



Laymen who bitterly complain that they cannot find their way through the maze of multiplying medical specialties and sub-specialties can take comfort: the fractionation of medical practice has gone so far that the specialists themselves are confused. The professional men's anger and frustration over their internal divisions came out clearly from 1,084 physicians of all types polled by *Medical Economics* (circ. 150,000). No less than 91 per cent worried about jurisdictional disputes and admitted uncertainty over the problem of where to draw the line.

Hardest put to defend his territory was the general surgeon—who, ironically, was himself the king of specialists little more than a generation ago. As orthopedists (bone and joint men) spread out from the big medical-college centers, many surgeons find themselves driven back from the body's extremities. As they retreat to the trunk, they find gynecologists, urologists and others staking claims on some particular organ or area. Only half the general surgeons polled still do orthopedic operations; only one in five does urological, plastic or heart-artery procedures.

Among the more limited specialties there are similar complaints of Balkanization. Pathologists, shut off in their laboratories studying specimens from patients they never see, resent the radiologists' monopoly of tracer studies done with radioactive isotopes. Plastic surgeons, whose practice is supposed to be little more than skin-deep, can hardly lift the scalpel without trespassing. Said one: "Every operation in my field crosses other specialties' borderlines." But it works both ways: the plastic men complain that ear-nose-throat specialists are too willing to bob noses.

Pediatricians should be the happiest of specialists, for as they say, "We are suffering from growing pains." Their business is booming, and because they treat the whole child (thus slopping all over the territory of most other specialists), they take on much of the aura of the old-fashioned family doctor. But even they complain: they would like to get their patients away from the obstetrician more promptly after birth, and some want to edge into consultation on the mother's condition before delivery.

Though most specialists agree that something should be done for their own peace of mind and also the patients' benefit, they have few constructive suggestions. More characteristic is the despairing plaint: "Who's to start working up the 'God only knows' diagnosis?" To that, neither confused specialist nor confused patient had an answer.

Cordially Yours,

President

Res Ipsa Loquitur

The American Medical Association recently held a conference in Chicago of Lawyers and physicians during which much of the discussion concerned professional liability and the changing attitude of the courts in this regard. An example is the currently pending supreme court decision in Kansas which threatens to broaden the responsibility of the physician to advise each patient of the possibilities that might occur in connection with treatment or face a malpractice judgment regardless of whether complications occurred or not. This Kansas litigation follows a trend that may be noticed in many states and could continue toward increasing the legal problems of the practice of medicine to where the physician may become vulnerable to malpractice judgments far beyond his present situation.

At the conference a considerable emphasis was placed on the doctrine of *Res Ipsa Loquitur* and the impact the changing attitude of the courts toward this doctrine is having on the practice of medicine. The Latin phrase means "The thing speaks for itself."

By and large the courts have held that medicine is an intricate science. A lay jury cannot easily determine whether malpractice exists except on the basis of expert testimony. The exception has always been under the doctrine of *Res Ipsa Loquitur*, when the condition was so obviously occasioned by negligence or error on the part of the physician that it could be understood by a layman. An example is the proof that a sponge was left in a surgical wound.

The courts in California have gradually expanded the application of this doctrine into the broadening areas until there is grave danger the end result might virtually amount to the necessity for a physician to guarantee the result. There are instances where the doctrine of *Res Ipsa Loquitur* has been allowed to apply because of a bad result alone.

The lecturer announced he had reviewed 111 cases of the application of *Res Ipsa Loquitur* in malpractice actions. More than 60 per cent of these involved complicated procedures where medical testimony was received by the court. The expanded use of this doctrine has been noted in numerous other states. Kansas, together with five other states, was cited as an area where it had been tried but rejected.

The speaker announced that it would be necessary for medicine and the bar to come to a close understanding. He recommended each state should organize an active committee consisting of lawyers and physicians. Kansas has had such a committee for several years. The results of these joint meetings have been most helpful and as they continue, a better understanding of the common problems of both groups should be achieved.

Welcome Chancellor Wescoe

On July 1, W. Clarke Wescoe, M.D., became Chancellor of the University of Kansas. His superlative performance as dean of the School of Medicine assures the University and the people of Kansas a period of great achievement in education during the years to come.

Doctor Wescoe's record at the University of Kansas School of Medicine is too well known to require mention for the readers of the JOURNAL. His friendly approach to every person with whom he comes in contact, his forthright and fearless integrity are the trademarks of his character, observed with such obvious pleasure by the physicians of this state that they unite in commenting the University is in good hands.

The improvement of education in all fields and at all levels is now the first ranking public service project of this Society. With Doctor Wescoe's especial understanding of this effort an even larger opportunity for service is provided the Society than could otherwise be possible.

Therefore, the warm and cordial relationship be-

tween the members of this Society and Doctor Wescoe will be continued as in the past but upon a broader base of influence offering a challenge which could result in achievement this state has never known.

So, Welcome Chancellor Wescoe. May your new responsibility bring you a measure of enjoyment equal to what we know will be the record of your success.

C. Arden Miller, Dean

Dr. C. Arden Miller has been named Dean of the University of Kansas School of Medicine in Kansas City, Kansas, effective July 1. The appointment was made by the Kansas Board of Regents following recommendation by the executive faculty of the Kansas school. He will succeed Dr. W. Clarke Wescoe, dean since 1952, who will assume the chancellorship of the University on that date.

The 35-year-old physician has been on the faculty since 1951 as an instructor, assistant professor and associate professor in pediatrics. Since 1957, he has been an assistant dean and medical director of the Medical Center's Children's Rehabilitation Unit.

He attended Oberlin College in Ohio and received his M.D. from Yale in 1948. He received the John and Mary R. Markle foundation grant in 1955, as a scholar in medical sciences.

Experiment on Drug Sales

The Pharmaceutical Association advises the Medical Society of an interesting experiment being tried on a voluntary basis by the druggists of this state. It represents a project physicians will welcome and might well prove to be of service to the public.

Many drugs available for sale over the counter produce dangerous side effects or may be hazardous if thoughtlessly used. The Pharmaceutical Association obtained from the Food and Drug Division of the State Board of Health a listing of eight classes of such drugs. They are all preparations containing narcotics, even if exempt from prescriptions; all antibiotic drugs, including ointments; antihistamines, including so-called sleeping pills; bromides and iodides; douche preparations; belladonna and preparations of its alkaloids; mercury preparations; and opthalmic preparations.

It is pointed out these generally bear cautionary labels, but those are frequently not read by the user and sometimes accidently are obtained by children.

The druggists of Kansas are now placing such items on a special counter near the prescription department where they are sold only by the pharmacist. He is attempting to caution each buyer against over-dosage and to call attention to the warnings on the label. This is done in the hope that after a trial period a reduction of accidents in this area can be shown. Should this voluntary effort prove of benefit to the public, it might produce evidence of sufficient weight that a stricter control of dangerous preparations could be legally obtained. It appears the experiment is a worthy one and will be watched with interest by the medical profession.

Assistants' Stand on Forand

At a recent meeting of the Shawnee County Medical Assistants Society held in Topeka, a resolution regarding Forand-type legislation was presented by the president, Val Braun. Mrs. Braun, speaking to a group of 144 Medical Assistants and guests, read the following resolution:

"It is our firm belief that Forand-type legislation is unfair. It proposes to provide health care benefits to a segment of the population covered under the Social Security regardless of their need for such benefits, while on the other hand, the bill completely overlooks our senior citizens not covered by Social Security and whose need for assistance of this type would probably be even greater.

"This type legislation is unfair in that it is to be financed by taxation, the taxes being paid by those many of whom are rather needy themselves. Needless to say, this type legislation would occasion increased taxes and we believe that our people the taxed to the maximum already. Rather than increase taxes, our leaders in the Senate and the House of Representatives should concentrate their efforts on decreasing the existing taxes and stabilizing our economy.

"It is further our belief that this type legislation would seriously harm the incentive of young people who, rather than strive for a goal, would assume the attitude of 'why bother, the Government will see me through.' Attitude of this kind would be harmful to the morale of the American people.

"This type legislation, and any other compulsory health care benefits to be paid for by taxation, is in effect socialized medicine; and socialized medicine is a step toward Socialism. Socialism in any form is foreign to the principles of the Democracy upon which this great nation was founded.

"For the above reasons, the Shawnee County Medical Assistants Society strongly opposes any and all Forand-type legislation."

This is a typical resolution that has come forth from the various county medical assistants societies in our state. The Medical Society is most grateful to these societies for their stand against socialized medical legislation.

Blue Shield

The Two and One-Half Million Dollar Question

In 1959, each thousand Kansas Blue Cross members used 30 more admissions to the hospital than the Blue Cross national average of admissions for the same number of members. Statistics reveal that in 1959 there were 169 admissions to hospitals for every 1,000 Blue Cross members in Kansas while the average for all 83 Blue Cross Plans that year was 139 admissions.

This means that there were 17,550 more cases incurred by Kansas Blue Cross members last year than there would have been if these members had used the hospital at the national rate. Therefore, this average in Kansas amounts to 2½ million dollars more in Blue Cross payments.

Studying the Question

The Utilization Study Committees, set up under the auspices of the Kansas Medical Society and the Kansas Hospital Association, are now in the process of studying this 2½ million dollar question.

This question they are studying might be more accurately put as follows:

> Is the additional use made of Blue Cross benefits by Kansas members due to real medical need, or are other factors responsible for the greater use? What are the other factors?

At the suggestion of this Utilization Study group, staff committees have already been appointed in 80 hospitals and others are being established. Their purpose is to study utilization within their own hospitals in the hope that information may be gathered which will contribute toward the elimination of any unnecessary use.

New KMS President Urges Cooperation

Cooperation by physicians is urged by Dr. F. E. Wrightman, Sabetha, newly-elected President of the Kansas Medical Society. "This is not just a project of the Kansas Medical Society on the state level. To be successful, there must be cooperation and assistance by every physician on every medical staff in Kansas.

"The Study Committees are now beginning to function throughout the state. The importance of this work cannot be over-emphasized. We must understand the causes of our higher utilization and correct any faulty use if it exists.

"The medical profession stands solidly behind voluntary prepayment. Our failure to conserve its values through a lack of concern for its problem is unthinkable.

"The freedom of medicine is tied to the future success of voluntary Plans such as Blue Cross and Blue Shield."

Would a "Piggy Bank" Pay the Bill?

There are those who say, "Why spend the money for Blue Cross-Blue Shield, I can put the same amount in the bank each month?"

Fine! But who knows how much care will be needed or how much the care will cost?

Suppose a person were to put an amount equal to the family rates for Blue Cross and Blue Shield service contracts into the bank each month. At the end of a year he would have saved $88.80 for hospital bills and $44.40 for doctor bills.

(These are the dues for the most common Blue Cross and Blue Shield group Plan—$10.00 deductible, $9.00 semi-private room allowance.)

The amount saved for hospital bills would not even cover the cost of a 4-day hospital stay for one member of the family—4 days at approximately $26.00 a day would cost $104.00.

On the other hand, a physician's charge for a simple closed reduction following a fracture of the forearm averages $65.00. The amount saved in the "piggy bank" for doctor bills for one year would be $44.40.

Personalities—IN KANSAS MEDICINE

An open house at the Coffey County hospital was held for the recognition for **Dr. A. B. McConnell's** 40 years of service to Burlington community.

Dr. Orville Clark, Topeka physician, was appointed to his second consecutive term on the Washburn University Board of Regents by the Topeka Board of Education.

Dr. Clark was first elected a Regent by the school board in 1956.

Dr. Clark is Editor and Chairman of the JOURNAL Editorial Board.

Dr. E. G. Padfield was among 87 members of the 1910 graduating class of the University of Kansas to receive 50-year pins at the group's reunion.

The reunion was in the KU student union building. Class members came from as far as Tacoma, Washington; Miami, Florida; and Hollywood, California.

Dr. Padfield has practiced in Salina since 1913. He also attended the 25th reunion of his class.

Dr. Joseph Shaffer, 77, was honored by the Simpson High School Alumni Association this year for his years of faithful service to the community. A registered pharmacist as well as being a physician, he has practiced medicine since 1907.

Dr. Shaffer is one of the few horse-and-buggy doctors still practicing in this section.

Dr. A. E. O'Donnell recently completed 60 years as a physician and surgeon, 47 years of which were spent ministering to the needs of the sick in Wilson community.

Among the long list of doctors recently examined and certified in the specialty of Obstetrics and Gynecology is the name of **Dr. Henry Aldis,** Fort Scott. Final certification of these doctors was made on April 15, 1960.

Certifications following examination are made once a year by this board.

Junction City recently honored a man who is physician and friend to hundreds in this city and the surrounding community.

It marked the 50th anniversary of medical practice in Junction City for **W. A. Smiley, M.D.**

They are proud of Dr. Smiley. Many know him as their long time family physician. Others know him as a friend. Still others know him as a sportsman and one of the top rifle and trap shots in Kansas, or for that part, the nation. A few recall him as an athlete; a fine football player, and as a "for free" coach of the Junction City High School team before the days of hired coaches, bands, and football stadiums.

NEW MEMBERS

The JOURNAL *takes this opportunity to welcome these new members into the Kansas Medical Society.*

Jerome B. Katz, M.D.
Menninger Foundation
Topeka, Kansas

Herbert Klemmer, M.D.
Menninger Foundation
Topeka, Kansas

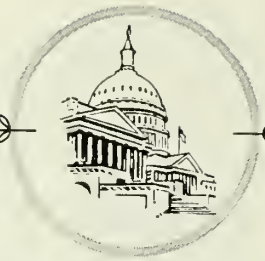
Carl D. Kobler, M.D.
415 N. Pomery
Hill City, Kansas

Robert M. Mathews, M.D.
7132 Reeds Road
Overland Park, Kansas

Charles G. Stephens, M.D.
Minneola Clinic
Minneola, Kansas

Lawrence Stross, M.D.
3 Palace Building
Emporia, Kansas

Harold M. Voth, M.D.
Menninger Foundation
Topeka, Kansas



Washington HIGHLIGHTS

This summary of Washington news is prepared by the A.M.A. Washington Office for distribution to state medical journals.

Omnibus Bill

An omnibus bill approved by the House Ways and Means Committee contains two provisions of major importance to physicians—Social Security coverage for doctors and a Federal-state program to provide health care for older persons with low incomes.

About 150,000 self-employed physicians would be covered by Social Security on the same basis as lawyers, dentists and other self-employed professional people now are covered. Becoming effective for taxable years ending on Dec. 31, 1960, or June 30, 1961, self-employed physicians would be required to pay a Social Security tax of 4½ per cent of the first $4,800 of income. Physicians also would be subject to the automatic increases in the Social Security tax in future years.

Medical and dental interns would be covered for the first time also.

Rep. Wilbur Mills (D., Ark.), Chairman of the Ways and Means Committee, was the main architect of the health program for "medically indigent" aged. It was designed to provide a broad range of hospital, medical and nursing services for persons 65 years of age and older who are able financially to take care of their ordinary needs but not large medical expenses.

It would be up to each state to decide whether it participates in the program. The extent of participation—the number of benefits offered to older persons—also would be at the option of individual states.

The states would determine the eligibility of older persons to receive benefits under the program. However, the legislation laid down a general framework for eligibility: persons 65 years and older, whose income and resources—taking into account their other living requirements—are insufficient to meet the cost of their medical care.

The program couldn't become effective until July 1, 1961. Before putting such a program into effect, a state would have to submit to the Federal government a plan meeting the general requirements outlined in the legislation.

Joint Financing

The program would be financed jointly by the Federal and state governments. Federal grants would have to be matched by participating states on the same basis as under the present old-age assistance formula.

States could elect to provide, with Federal financial aid, any or all of the following benefits:

1. Inpatient hospital services up to 120 days per year; **2.** skilled nursing-home services; **3.** physicians' services; **4.** outpatient hospital services; **5.** organized home care services; **6.** private duty nursing services; **7.** therapeutic services; **8.** major dental treatment; **9.** laboratory and x-ray services up to $200 per year, and **10.** prescribed drugs up to $200 per year.

The committee put a $325 million price tag on the program for the first full year of operation—$185 million Federal and $140 million state. However, this estimate could hardly be more than an educated guess of sorts. The actual cost would depend upon unpredictable factors—how many states would participate, how many benefits they would offer, and how many older persons would qualify and what services they would require.

The committee estimate was based on between 500,000 and one million older persons a year receiving health services under the program. If all states participated fully, the committee said, potential protection would be provided as many as 10 million aged whose financial resources are so limited that they would qualify in case of serious or extensive illness.

Where Money Goes

Payments under the program would go directly to physicians and other providers of medical, hospital, and nursing services.

In addition to the federal grants for the "medically indigent," about $10 million more in federal funds would be authorized for payment to states for raising the standards of medical care benefits under present public assistance programs for older persons.

The approach of the Mills program was similar to that of Point two of the American Medical Association's eight-point program for health care of the aged. Point two stated that the AMA supports federal grants-in-aid to states "for the liberalization of existing old-age assistance programs so that the near-needy could be given health care without having to meet the

present rigid requirements for indigency." Such a liberalized definition of eligibility should be determined locally, the AMA said.

Approval of the Mills plan by the committee marked a sharp setback for organized labor leaders. But they continued their all-out pressure compaign in an effort to get Congressional approval of Forand-type legislation that would use the Social Security system to provide hospitalization and medical care for the aged. After being defeated in the Ways and Means Committee, labor union leaders and other supporters of Forand-type legislation directed their major efforts to trying to get the Senate to substitute the Social Security approach.

The committee had been considering health-care-for-the-aged legislation intermittently for more than a year. Hearings were held on the Forand bill last summer but action was postponed until this year.

Forand Rejected

Prior to approving the Mills plan, the committee rejected the Forand bill (three times) and the Eisenhower Administration's far-reaching public assistance alternative. Both plans were opposed by the medical profession and allied groups.

While these legislative proposals were in the limelight, a little-noticed bill was enacted into law to give $50 million in relief to taxpayers burdened with taking care of ill, dependent parents.

The new law permits taxpayers full deduction on federal income taxes for medical and dental expenses paid for a dependent parent 65 years of age and older. Previously, such a deduction was limited to costs in excess of three per cent of the taxpayer's adjusted gross income.

S. S. Changed

Changes in the Social Security program called for in the catch-all bill approved by the Ways and Means Committee included:

1. Eliminate the requirement that a disabled person must be at least 50 years old to be eligible for Social Security benefits.
2. Provide Social Security benefits for about 25,000 widows of workers who died before 1940.
3. Increase the benefits of 400,000 surviving children of workers covered by Social Security.

Although all these revisions will increase costs of the program, neither the Social Security tax rate nor tax base was increased.

The revisions will mark the fifth consecutive year of a national election that the Social Security program, originally enacted in 1935, has been expanded. Some of the expansions have been accompanied by tax increases.

The Business Side of Medicine

(Continued from page 404)

Q. Was the rate of interest also increased on the Series H Bond?

A. Yes, effective June 1, 1959, the rate was increased to 3¾ per cent if held to maturity.

Q. Was there a change in the interest on Series H Bonds purchased before June 1, 1959?

A. Yes, your old Series H Bonds earn an additional one half per cent if held to maturity.

Q. What will the interest checks amount to on the Series H Bond I purchased now?

A. On a $1,000 Series H Bond, you will receive an interest check of $8.00 at the end of the first year; $16.00 at the end of 1½ years; and $20.00 at the end of each six months thereafter until the Bond matures. This means that after the first 1½ years the interest checks you receive are equivalent to a four per cent yield and average out to make the Bond return you 3¾ per cent for the entire Bond life.

Q. Is there any way that I can get current income from the Series E Bonds I now own?

A. Yes. Under a new program announced on January 1, 1960, you can convert your Series E Bonds to Series H Bonds, and the interest will be paid to you twice each year by Treasury check.

Q. Where do I go to get details of the best way to handle my bonds?

A. See your banker. You will find him interested.

Twenty-eight American medical students will go into the dark corners of three continents this summer and winter to study "grass-roots" medicine.

Far from U. S. metropolitan medical centers, the students, winners of Smith Kline & French Foreign Fellowships totaling some $50,000, will study and give first-hand combat to diseases not commonly seen in America. Guided by physicians already practicing in remote areas, the Fellows will help to organize and maintain public health programs and—at the same time—gain valuable clinical experience under their proctors.

As "goodwill ambassadors" they also will represent American medical school education in areas where medicine often is practiced in primitive surroundings.

The fellowships were announced recently by the Association of American Medical Colleges, administrators of the fellowships, in Evanston, Ill. Chosen by a committee of prominent medical educators selected by A.A.M.C., the 28 Fellows will receive individual grants ranging from $900 to $3,000.

A Kansas student to receive the fellowship is Charles C. Scott, senior, University of Kansas School of Medicine. He will spend 12 weeks with a public health unit in the Philippines. His home is in Leawood, Kansas.

KMS Obituaries

WILLIAM L. WARRINER, M.D.

Dr. W. L. Warriner, 97, died April 23, in a Topeka hospital. He had practiced medicine 72 years. He was the oldest practicing physician in Kansas when he retired recently.

Born Sept. 23, 1862, at Amboy, Ill., he graduated from Northwestern Medical College in Illinois in 1888.

He practiced medicine at Fort Scott five years and at La Cygne five years before coming to Topeka in 1898. His office was in the Central Building when he retired March 1 of this year.

The doctor was a member of Central Congregational Church for more than 50 years and was the last survivor of the 15 doctors who organized the Shawnee County Medical Society in 1901.

For 15 years he taught physiology in the Kansas Medical College, organized in 1900. The college was later affiliated with Washburn College and the University of Kansas.

He is survived by a son, Charles W. Warriner of Los Angeles.

JACOB HINDEN, M.D.

Dr. Jacob Hinden, 87, a Strong City physician the last 57 years, died at the Newman Hospital, Emporia, where he had been a patient three weeks. Until the onset of an illness four months ago, he had been at his office almost daily. Long active in civic affairs of the community, Dr. Hinden had served as mayor eight years, a member of the grade school board many years, as Chase County coroner about 47 years and as a Santa Fe doctor more than 50 years.

Dr. Jacob Hinden was born June 29, 1873 in Oskaloosa, Kansas. He attended the Oskaloosa schools and lived on a farm until the age of 23 when he began the study of medicine at the Kansas Medical College of Topeka which later affiliated with the University of Kansas. He served his internship at the Santa Fe Hospital in Las Vegas, New Mexico.

He was a life member of Zeredatha Lodge No. 80, A.F. & A.M.; Knights Templar, of Emporia; Topeka Consistory; Arab Shrine, Topeka; Low Twelve Club, Emporia; Union Lodge No. 15, I.O.O.F., Emporia; the American Medical Association, and the Twin Cities Lions Club.

Surviving him are his wife, his two children, five grandchildren and five great-grandchildren.

L. O. FORNEY, M.D.

Dr. L. O. Forney, 88, pioneer Hutchison physician, died May 25 in Grace Hospital. He had been an invalid the past seven years.

Dr. Forney, a horse-and-buggy doctor in the finest tradition, was the Reno County physician for 20 years. He resigned the county post in 1939 but continued his private practice.

In the course of his duties he covered some 20,000 miles a year making house calls throughout Reno County.

Dr. Forney's first office in Hutchinson was in the Whiteside building. He came to Hutchinson from Keokuk, Iowa, where he was graduated from the CP and S College of Physicians and Surgeons.

Dr. Forney was born Sept. 7, 1871 and came with his parents from Iowa to Lyons when he was 2.

Survivors include a daughter, a son, two sisters, four grandchildren, and five great-grandchildren.

ALBERT CLARK BAIRD, M.D.

Dr. Albert C. Baird, 57, Parsons physician and surgeon, died at a Wichita hospital May 14, following an operation. He was born July 15, 1902, in Owensboro, Kentucky. His family moved to Columbus, Georgia, where he completed his secondary education. He attended the University of Georgia and Auburn University and took his medical training at the University of Cincinnati.

Among his survivors are his wife, a daughter, two sisters, and a brother.

Dr. Baird came to Parsons in 1931 as house surgeon at the MKT Employees Hospital. He entered private practive in Parsons in 1953. He was a member of St. John's Episcopal Church in Parsons and of the Rotary Club.

He served as an army surgeon during World War II.

Book REVIEWS

COMMUNICABLE AND INFECTIOUS DISEASES, 4th edition. Franklin H. Top, M.D., 812 pages. Price $20.00, March 1960, The C. V. Mosby Company, St. Louis, Missouri.

This edition covers communicable and infectious diseases including discussion of many problems such as adenoviruses, enteroviruses and staphyloccal infections, as well as fungus and rickettsial diseases. It is well written, easy to read and easy to understand. The sections on management of communicable diseases in the hospital and in the home are very worthwhile. This book will be very useful to any physician treating communicable and infectious diseases.—*W.N.*

MEDICAL CARE OF THE ADOLESCENT. J. Roswell Gallagher, M.D., Appleton-Century-Crofts, Inc., New York, 1960, 369 pages, Illustrated. Price

Medical Care of the Adolescent by J. Roswell Gallagher, M.D. of the Harvard Medical School is a basic treatise on the diseases and problems, both normal and abnormal, peculiar to the adolescent. His approach to the adolescent as an individual with typical complaints and feelings for the adolescent age group is to be commended.

The practicing physician's role in the care of the adolescent's problems and prevention of future difculties is emphasized. The need of the adolescent for judicious health care and emotional counselling which can be done by the general practitioner is the prime area of Dr. Gallagher's attention.—*Y.E.P.*

THE OFFICE ASSISTANT IN MEDICAL PRACTICE. Portia M. Frederick and Carol Towner. W. B. Saunders Company, Philadelphia, 1960, second edition, 407 pages. Price $5.25. Illustrated.

The Office Assistant in Medicine Practice should have been entitled "The Office Manual . . .", as this book is a must in every physician's office. It covers a wide variety of subjects from telephone technique to the contents of the physician's bag. The book contains illustrations of instruments, methods of giving injections, various office records, valuable sterilization charts, sample collection letters suited to various circumstances. An entire chapter is devoted to collections. "The Office Assistant" goes extensively into office procedures in connection with banking. It also acquaints the reader with law problems relating to medical practice. It covers the all-important subject of scheduling the appointments.

The book, in conclusion, lists common medical abbreviations and symbols. It contains an index whereby the assistant may quickly find, for example, how to handle certain office procedures while the physician is on vacation, and other valuable hints.

BOOKS RECEIVED

Books received by the JOURNAL OF THE KANSAS MEDICAL SOCIETY *are acknowledged in this column. Selections will be made for more extensive review in the interests of readers as space permits. Members of the Society, from time to time, review these books and their critique is presented in this section. The reviewers receive the complimentary book from the publisher for their efforts.*

Any Kansas physician interested in reviewing any of these books or other books in his specialty, please notify the JOURNAL.

SIGNIFICANT TRENDS IN MEDICAL RESEARCH. Ciba Foundation 10th Anniversary Symposium. G. E. W. Wolstenholme, O.B.E., editor, Little, Brown and Co., Boston, 1960, 356 pages, Illustrated, Price $9.50.

BIOCHEMISTRY OF HUMAN GENETICS. Ciba Foundation Symposium. G. E. W. Wolstenholme, O.B.E. and Cecilia M. O'Connor, B.Sc., editors, Little, Brown and Co., Boston, 1960, 347 pages, Illustrated, Price $9.50.

LIFESPAN OF ANIMALS. Colloquia on Ageing Vol. No. 5, G. E. W. Wolstenholme, O.B.E. and Maeve O'Connor, B.A., Little, Brown and Co., 1960, 324 pages, Price $9.50.

DRUGS OF CHOICE 1960-61. Second Edition, Walter Modell, M.D., editor, C. V. Mosby Co., St. Louis, 1960, 958 pages, Price $13.50.

CURRENT THERAPY—1960. Latest Approved Methods of Treatment for the Practicing Physician, Howard F. Conn, M.D., editor, W. B. Saunders Co., Philadelphia, 1960, 808 pages, Price $12.00.

SURGERY OF WORLD WAR II (Neurosurgery). Volume II, Major General S. B. Hays, Surgeon General U. S. Army, Editor in Chief, Office of the Surgeon General Department of the Army, Washington, D. C., 1959, 705 pages, Price $7.00, Illustrated.

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Scientific
ARTICLES

Coarctation of the Aorta

A Presentation of 110 Cases

WILLIAM A. REED, M.D., ***and***
C. FREDERICK KITTLE, M.D., ***Kansas City***

ALTHOUGH ORIGINALLY DESCRIBED IN the 18th century by Morgagni and Paris, coarctation of the aorta remained essentially a clinical curiosity until 1945 when its surgical correction was first successfully accomplished. The intervening years since 1945 have seen prompt diagnostic recognition of this lesion and a negligible mortality in those patients treated surgically.

Coarctation of the aorta (*coarctatio,* Latin, tighten together) is a life shortening lesion which may result in death by several means: aortic rupture, subacute bacterial endocarditis, or the sequelae of hypertension—heart failure and cerebral vascular accidents. Although 70 per cent of 304 patients studied by Abbott and Riefenstein reached the age of 40 years, the average life span was only 30 years.

Two Basic Types

Bonnet differentiated two principle types of coarctation of the aorta and devised the terms—"adult" and "infantile." The "adult" type he defined as a relatively short aortic stricture at or just distal to the ligamentum arteriosum. The "infantile" type he described as a preductal stricture associated with patency of the ductus arteriosus into the distal aorta. Other more recent classifications[4, 16, 23, 30] have been devised according to the location of the aortic narrowing, the degree of collateral circulation, and whether a ligamentum or a ductus arteriosus is present.

A particular clinical group is constituted by infants suffering from the effects of coarctation of the aorta in contrast to those individuals who manifest symptoms much later in life. Survival beyond the first year of life when symptoms appear in infancy is unusual.[11, 17, 24, 33, 41]

We should like to review our experiences with coarctation of the aorta at the University of Kansas Medical Center from 1950 through 1959. For the purposes of clinical, diagnostic, and operative features we have divided the patients into two major groups:

Two Divisions

Type I, consisting of 85 patients in which the coarctation was located at or distal to a ligamentum or ductus arteriosus. This is the so-called "adult" or the post-ductal type of coarctation *(Figure 1)*. Seventy-one of these were operated upon.

Type II, consisting of 25 patients in which a ductus arteriosus was found distal to the coarctation: the "infantile" or preductal coarctation *(Figure 2)*. Ten of these were operated upon.

Six other patients have been observed but have not been classified since they were not operated upon and the exact location of the coarctation is not known.

From the Department of Surgery, University of Kansas Medical Center, Kansas City, Kansas.

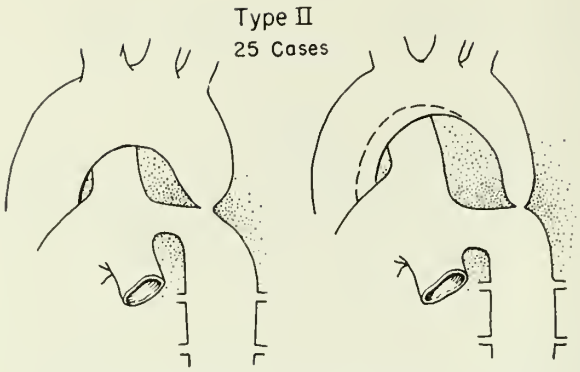

Figure 2. Usual situation encountered in "infantile" coarctation. Note that the entire aortic arch may be narrowed.

Etiology

Bremer and others[14] considered the post-ductal type of coarctation (Type I, *s.v.*, or "adult") a faulty result of ductus arteriosus closure with extension of its obliteration into the aorta. Although applicable in most instances this would not explain those coarctations in which the ductus remains or where the aortic stricture is located some distance from the ligamentum. The most widely accepted theory is that both types of coarctation arise from a defect in the development of the fourth aortic arch and its junction with the dorsal aorta and the sixth aortic arch.[1, 11]

Diagnosis

In Type I, the "adult" or the post-ductal coarctation, one is impressed by the absence of symptoms or their minimal degree in most patients. Generally a heart murmur or an elevated arm blood pressure has been detected during a routine physical examination. When symptoms do exist and these are most common over the age of 20 years, headache, fatigability, flushing of the face, and palpitations are the symptoms most frequently mentioned. Occasionally leg cramps may be noted. A high index of suspicion and an awareness of this diagnosis on the part of the family physician when hypertension is found in young individuals is the one most essential element in diagnosing coarctation of the aorta.

The findings in our patients are summarized in *Table I.* Absent or decreased lower extremity pulses, elevated arm systolic blood pressures in comparison to leg pressures (more than 20 mm. of mercury), a systolic murmur along the left sternal border heard also in the interscapular area, and retinal changes[18] were found in most of the patients *(Figures 3 and 4).* Evidences of collateral circulation were noted in the subcutaneous areas in older individuals in the upper

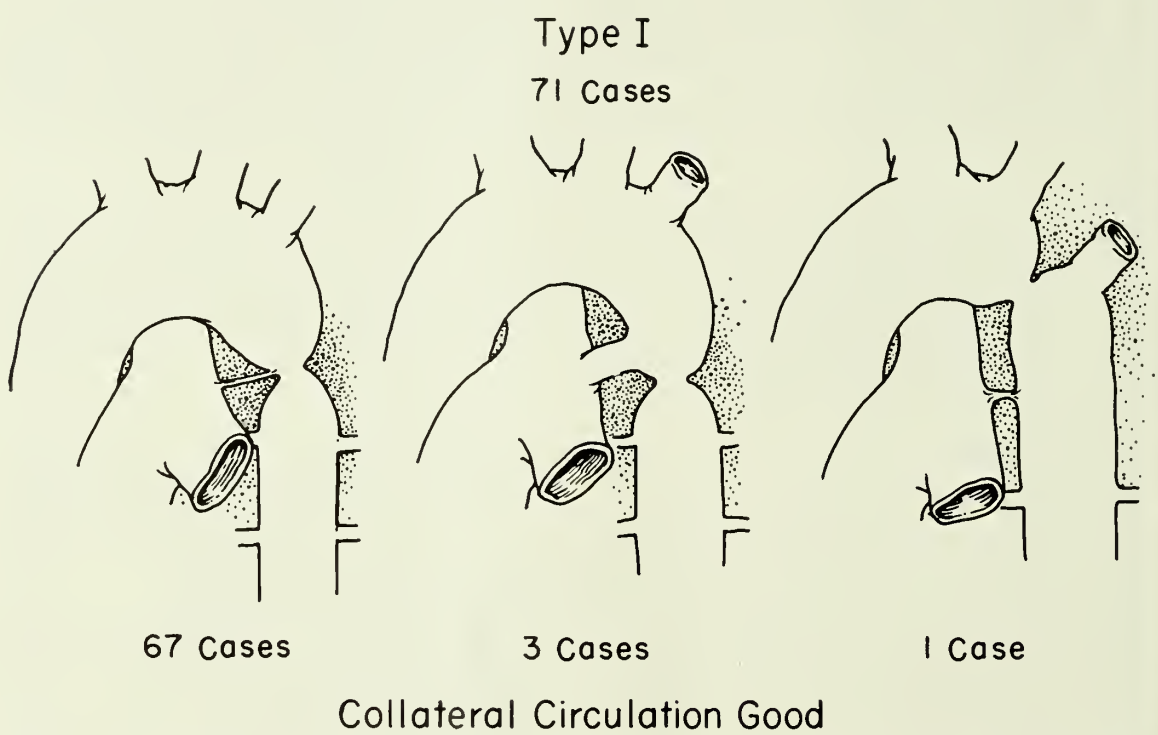

Figure 1. The anatomic arrangement found in the patients operated upon is shown. A ductus was found in three patients. Abnormalities of the post-stenotic area are not pictured.

part of the thorax. Notching of the inferior surface of the ribs (third to eighth) was found on chest roentgenograms in 60 per cent of this group. This radiologic finding is almost pathognomonic for coarctation of the aorta, other causes of it being extremely rare. Notching is uncommon in the young individuals but generally is present in patients over 15 years of age. Other X-ray findings[10] such as diminutive aortic knob, a figure three sign, and a curvaceous internal mammary artery outline in the lateral film have been described.

The electrocardiogram generally reveals evidence of aortic obstruction as reflected by left ventricular hypertrophy or strain. This was present in 63 per cent of our patients. Additional diagnostic information can be obtained by phonocardiography, ballistocardiography,[27] and simultaneous brachial and femoral arterial pulse tracings. In the last a delay in femoral arterial pulse contour is present. Angiocardiography has been used but generally is not necessary for this diagnosis.

Type II—"infantile" or preductal coarctation—is generally brought to attention when an infant presents with heart failure. The frequent association of other grave congenital abnormalities[2, 11] often makes the diagnosis confusing and difficult. *Tables II and III.* Blood pressure by the flush technique in the upper extremities is generally higher (more than

TABLE I

INCIDENCE OF FINDINGS IN 85 PATIENTS WITH TYPE I COARCTATION WHICH WERE HELPFUL IN ESTABLISHING DIAGNOSIS

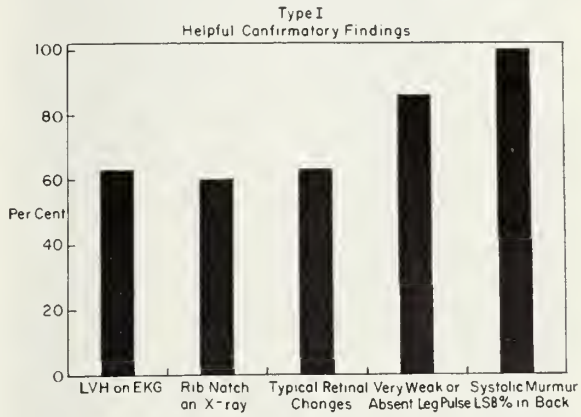

TABLE II

ASSOCIATED ABNORMALITIES IN TEN PATIENTS WITH TYPE II COARCTATION TREATED BY OPERATION. INCIDENCE OF GRAVE ASSOCIATED LESIONS AS REPORTED BY OTHERS IS SHOWN

Type II Coarctation (Treated by Operation) Coexisting Deformities

Case No.	*Hypoplasia Aortic Arch*	*Fibro-elastosis*	*Valve De-formity*	*Renal De-formity*	*T-E Fistula*	*Mon-golism*	*VSD*	*Super Numery Digits*	*Rt. Arch*	*ASD*	*A-P Window*
1	+	+	+								
2				+	+	+					
3	+		+				+				
*4											
5							+				
6								+	+		
7							+				
8		+									+
9											
10			+				+			+	
	2	2	3	1	1	1	4	1	1	1	1

* No Post-mortem Examination
Two Patients Living — Avg. Age: 3 wks.

Grave Assoc. Lesions	44% (25 Cases)	Minor Assoc.	20%	Total 80%
Grave Assoc. Calodney	27%			
Grave Assoc. Abbott	60%	Minor Assoc.	33%	Total 77%
Grave Assoc. Blocford	25%			

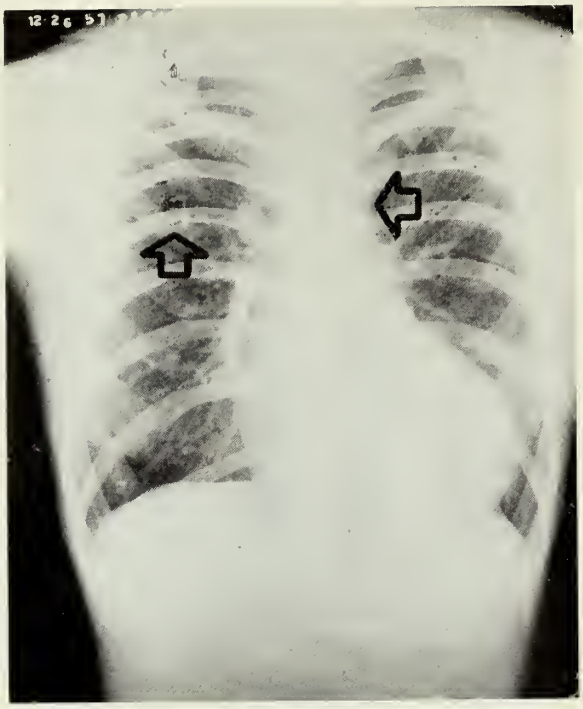

Figure 3. Chest roentgenogram of patient with Type I coarctation showing rib notching (left), figure "3" sign (right) and prominent left ventricle.

20 mm. of mercury) than in the lower extremities although this finding may be absent when severe heart failure is present. If the ductus is sufficiently large cyanosis of the lower extremities can be noted. Retrograde aortography or angiography is frequently necessary for confirmation of this diagnosis.[31] The electrocardiogram may show right, left, or combined ventricular hypertrophy, but is generally grossly abnormal.

Indications for Operative Treatment

Prior to 1945 no palliative or curative treatment was available for coarctation of the aorta. Within several months Crafoord of Stockholm and Gross of Boston both published descriptions of aortic resection with end-to-end anastomosis. Other methods[6, 42] of operative treatment such as anastomosing the subclavian artery to the distal aorta have been described, but the treatment of choice remains essentially as that outlined by Crafoord and Gross in their original articles. The immediate successes and encouraging results[4, 12, 33, 37, 39] in these early cases focused attention on this congenital anomaly. By 1956 Rumel *et al.* were able to collect 1,601 cases treated surgically and noted relief of hypertension in 96 per cent with an operative mortality within three months postoperatively of only 8.6 per cent. In our group of 71 patients there was one death within three months postoperatively.

In Type I coarctation all patients should be considered for operation unless definite reasons are present to avoid a surgical procedure. Advanced age *per se* should not be considered as a contraindication.[28, 34, 35]

In Type II coarctation—preductal or "infantile" type—considerable difference of opinion exists as to the operability of these patients. While some reports have indicated moderate success with operative and medical treatment, others have reported extremely high mortality with discouraging results.[11, 41] Although operation is attended by high risk intervention appears worth while in the infant not doing satisfactorily on medical treatment. Relief of intractable heart failure due to an obstructive lesion of the aorta can frequently be accomplished only by surgical excision of the narrowed segment. Accompanying defects although often present may result in the subsequent death of the individual, but resection can provide sufficient palliation to allow other defects to be cared for later.

Surgical Technique

A standard left posterolateral thoracotomy incision entering the pleural cavity through the bed of the resected fourth rib or the fourth interspace is used. The aorta is mobilized from proximal to the left subclavian artery to a point distal to the coarctation. Often the first two pairs of intercostal arteries are aneurysmal and constitute a potential source of severe hemorrhage. These are best ligated and transected. The ligamentum or ductus arteriosus is transected and sutured. The area of stricture is excised at the point where the largest matching diameter of proximal and distal ends can be obtained *(Figure 5)*. End-to-end anastomosis, using two or three continuous sutures 4-0 or 5-0 silk supplemented by interrupted sutures is the method of choice. This was used in 58 in-

Figure 4. Photograph of the fundus of a patient with Type I coarctation. "Corkscrew" tortuosity of the arterioles in absence of crossing changes was the most reliable feature.

stances. In 10 patients because of long strictured areas or poststenotic aneurysmal dilatation aortic grafts were necessary. In eight patients homografts were used and in two patients synthetic Dacron® grafts were inserted *(Figure 6)*.

Subclavian-aortic anastomosis was done twice in our early efforts, but is no longer used.

In approximately 30 per cent of our adult patients trimethaphan camphorsulfonate (Arfonad®) was given to induce hypotension (80-100 mm. mercury systolic) during dissection about the great vessels and during the anastomosis. Care was taken not to prolong the use of this hypotensive agent beyond 20 or 30 minutes.[9]

After the anastomosis had been accomplished the distal clamp was gradually released. If hemostasis was satisfactory the proximal clamp was then removed. If the blood pressure fell precipitously the proximal clamp was reapplied and slowly released over a longer period of time. After meticulous homostasis had been secured the mediastinum and pleura were approximated and the chest closed in the usual fashion with intrapleural drainage.

Results

Type I. *(Figure 7)* Of 85 patients 71 were subjected to operation. Seventy had resection of the coarctation and in one patient exploration only was done. The majority of the operated patients made an uneventful recovery. In several a syndrome of abdominal pain accompanied by hypertension of several days' duration was noted. This has been described by others[15, 37, 40] as a complication following resection of coarctation of the aorta. We did not find laparotomy necessary in our patients although others have believed an acute abdominal condition to be present and have done laparotomy. In these patients there has been histologic evidence of arteritis of the intra-abdominal vessels and some actual gangrene of the ileum successfully treated by resection. Numerous theories have been postulated to explain this phenomenon.[15, 40]

One of our 71 patients died following operation. Disruption of the aortic anastomosis occurred suddenly on the 11th postoperative day. No evidence of infection was found at postmortem examination.

TABLE III

ASSOCIATED ABNORMALITIES FOUND AT AUTOPSY EXAMINATION IN 15 PATIENTS TREATED WITHOUT OPERATION (TYPE II COARCTATION)

Type II Coarctation (Not Operated Upon) Coexisting Abnormalities

Case No.	*ASD*	*VSD*	*A-P Window*	*Hypoplasia Left Ventricle*	*Hypoplasia Aortic Arch*	*Renal Deformity*	*Ovarian Agenesis*	*Anomalous Coronary Artery*	*Esophageal Atresia*	*Hamartoma of Heart*	*Valve Deformity*
1											
2				+	+						
3				+	+						+
	+	+				+					+
5											
*6						+	+				
7					+						
8											
9						+	+	+			
10			+			+	+	+			
11				+	+				+		+
12											
13	+										
**14											
	+	+								+	
	5	2	1	3	4	3	2	1	1	1	3

* Turner's Syndrome

** Died of SBE

Av. Age: 3 wks.

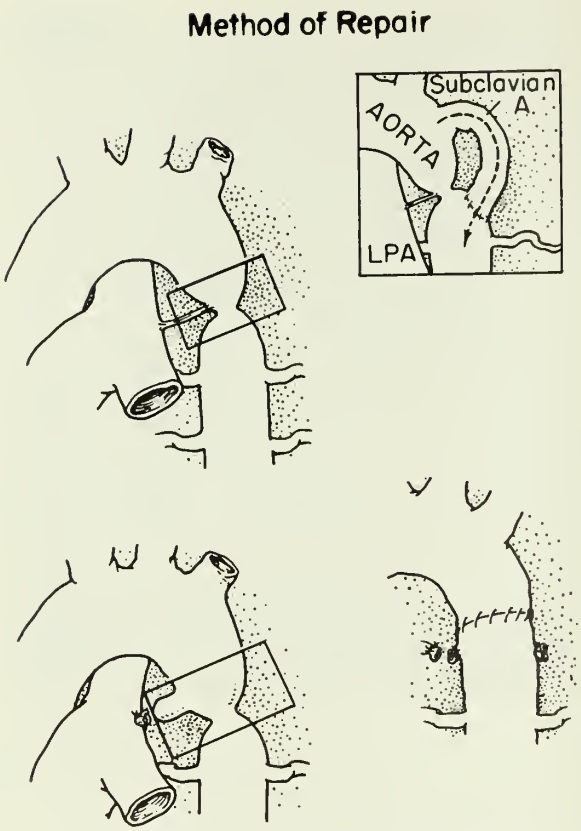

Figure 5. Two patients were treated by subclavian-aortic anastomosis (upper right). Fifty-eight patients were treated by excision (left) and end-to-end anastomosis.

In one of the two patients in which a subclavian-aortic anastomosis was done gangrene of the left forearm developed necessitating amputation.[26] Two patients developed hemothorax in the postoperative period; one of these responded satisfactorily to medical treatment, and one required subsequent decortication.

In the last 56 consecutive patients with resection for coarctation of the aorta there has been no mortality and no appreciable morbidity.

The surviving 70 patients have been followed from two months to ten years. Their average preoperative blood pressure in the arm was 165/100 and in the leg 115/85, pressures being higher with older age. The average postoperative blood pressure in the arm was 135/85 and in the leg 140/90.

The patient who was explored only survives with hypertension. Of the two subclavian-aortic anastomoses, one was relieved of hypertension and survives; the other had no relief of his elevated pressure and died eight years postoperatively of heart failure. One female, 28-years-old, with severe associated aortic stenosis had no lowering of her systolic blood pressure and died suddenly 11 months after resection, presumably from a sudden cardiac arrhythmia. Autopsy disclosed a bicuspid aortic valve with stenosis. Three patients operated upon in 1954 had no change in their preoperative arm pressures and in retrospect probably had insufficient resection of the coarcted segment. Another patient did not return to normotensive levels, but did change from a preoperative pressure of 210 systolic to a postoperative pressure of 160. With these exceptions the remainder returned to near normotensive levels of blood pressure.

Headaches, flushing of the face, cold feet, and other symptoms were relieved postoperatively when the blood pressure became normal. The electrocardiograms have lost the pattern of left ventricular strain, although changes of left ventricular hypertrophy have usually remained.

Thirteen of the surviving patients (13 of 70) have associated cardiac lesions: a deformed aortic valve, 11 patients and a ventricular septal defect, two. In one patient the aortic stenosis became symptomatic following coarctation repair. Aortic valvotomy was recommended and done using extracorporeal circulation with relief of this obstruction.* One patient died suddenly from her aortic stenosis *(s.v.)*, the other patients with aortic stenosis and ventricular septal defect are being followed. Undoubtedly some of them will require definitive repair of their defects in the future.

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* National Heart Institute—Dr. Andrew G. Morrow.

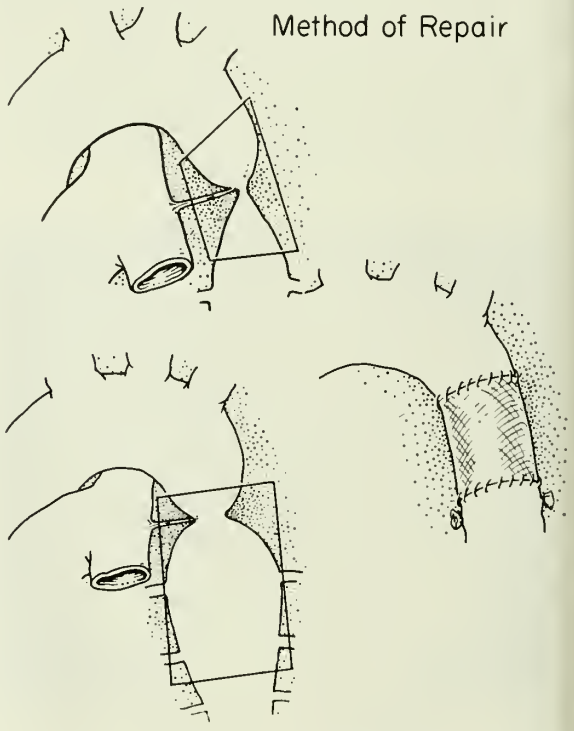

Figure 6. The long tapering stricture or post-stenotic aneurysmal dilatation was treated by vessel grafts (10 patients).

The incidence of associated aortic valve deformity was discussed by Abbott and stated to be 25 per cent. Although some have recommended or suggested the use of prophylactic antibiotics in these patients, we have not done this and there has not been any evidence to justify such a procedure.

Two patients had an associated Turner's syndrome,[43] a complex endocrine abnormality occurring in females and consisting of infantilism (small stature), webbed neck, cubitus valgus, and often cardiovascular anomalies. Although ostensibly females these individuals are chromosomal males.[20] Albright was the first to call attention to this abnormality in patients with coarctation.

Aortic homografts were used in eight patients. In two of these observed five and nine years postoperatively there is definite radiologic evidence of calcification. None have shown aneurysmal changes, but their ultimate fate is questionable. Our present choice, for this reason and for their availability, in vessel grafting is knitted dacron.

Type II. Only 10 of these 25 patients were subjected to operation. Of the 10 there were two survivors, the others dying in the immediate postoperative period or within one month of operation. The usual cause of death was congestive heart failure generally due to associated cardiac abnormalities or the complications of this age group such as postoperative atelectasis, pneumonia, etc.

Of the two surviving patients one is doing well two years postoperatively although the clinical findings of a ventricular septal defect are present. The other had a Type II coarctation as well as mitral stenosis. Definitive treatment was not attempted.

The other 15 patients died during medical management. In at least two instances operation had been planned with the patient dying only several hours before the scheduled resection. Obviously this group of patients presents a serious prognosis. We cannot accept the therapeutic nihilism recently advocated by those who state that operation is not indicated in these patients. The occasional patient that can be salvaged is worth the high mortality in this group. Resection of the coarctation should be viewed as a palliative procedure, tiding these infants over until definitive repair can be done of the other cardiac defects that are usually present.

Six patients have not been classified as to either

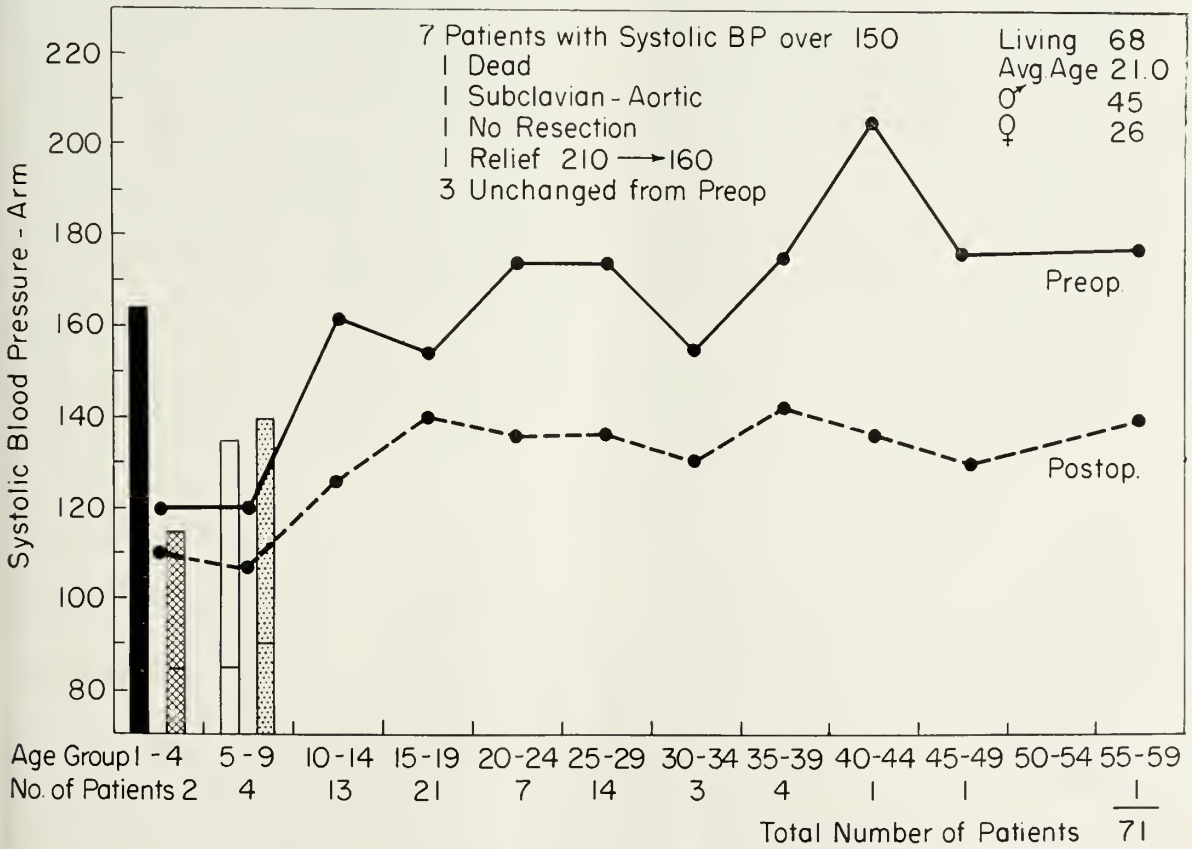

Figure 7. Summary of results in Type I patients treated by operation showing decrease in systolic blood pressure following operation. The average arm and leg pressure preoperatively (two bars on left) and postoperatively (two on right) show rise in leg blood pressure and fall in arm blood pressure following operation.

Type I or Type II. All are under the age of six years and doing well on continued observation. Five are probably Type I coarctations and operation has been deferred for a more optimal age.

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Department of Medicine

University of Kansas Medical Center 1953-1960

E. GREY DIMOND, M.D., ***La Jolla, California***

This paper presents a review and definition of the activities of the Department of Medicine at the University of Kansas Medical Center from 1953 to 1960. Concepts of curriculum, method of staffing, efforts at teaching, and tradition, and finally research have been described. The Department has changed much in these seven years. From a small, homogeneous group of devoted men, it has elaborated and extended its activities until presently it represents a cadre of 32 full time staff men, 50 residents and fellows, and responsibility for more than 300 teaching beds.

Two hundred students are taught at these bedsides each year. The postgraduate training each year of 3,000 physicians in practice is shared by the Department. Twenty thousand patients are seen in the General Medicine Clinics, four thousand patients are admitted each year to the Medicine beds. This paper is a review of some of the basic concepts upon which this structure was assembled.

THE PURPOSE OF THIS paper is to report on the activities of the Department of Medicine at the University of Kansas. It is a report to the Physicians of Kansas describing the activities of this particular department. Although a Medical School is the whole of its many departments, the Department of Medicine at any school should be the central strength, giving balance and breadth to the school's activities; curriculum, research, patient care.

This report is a review of both the basic philosophy of the department and an outline of the accomplishments of the years 1953 to 1960. These were vigorous and exciting years, matching the era of the school's great growth and those who were a part of these years will long recall the pleasures and pains which we all felt at the beginning of the re-birth of our school: bringing life to and creating a new curriculum, planning and building a Medical Center, the exciting concept of the Kansas Rural Health Program, carrying on an immense postgraduate effort and the gathering of a staff. And as an inevitable part of all growth, a period of maturation.

To a great degree, the activities of the Department of Medicine paralleled the course of growth of the other departments, some earlier, some later. Medicine is now at the maturation level, still growing, consolidating, carrying out its role as the central, balancing department. But as happens in life, the excitement of the early 1950's must level off into a disciplined, responsible atmosphere. (And as in life, one recalls the more eventful days with nostalgia.)

The First Tenet: Student Curriculum

To give the Department's teaching effort a constant and recognizable theme, it was essential to have a basic concept of the role of the Department in the student's development towards physicianhood.

The Juniors

The Department's initial, significant contact with the student is made during the junior year and it was decided to hold to a central theme of *daily* ward rounds, with a small group of students (five) assigned to one senior staff man. This "unit of instruction" bases its experience on the daily course of disease as it is seen in a 20 bed unit; the students have meticulous bed to bed rounds made by their single, responsible staff man, for a two hour period. This is supported by afternoon chart conferences. The student has this unit of beds as his single environment and all patients, regardless of status or disease, are cared for in such units. These "units" (five students, 20 beds, one staff man, one resident, one intern) are kept together for a six week period. This gives the student certain distinct advantages: the chance to see a patient and his illness run its course, the chance for the student to identify himself as a personality, and consequently the chance for a staff man to clearly "know" each student. This offers protection against the fragmentation which is inevitable with an increased student body and an increased staff.

Each student, after six weeks, moves to a second

Doctor Dimond was professor of medicine and chairman of the department when this report was made. He is now head of the Institute for Cardio Pulmonary Diseases of the Scripps Clinic and Research Foundation at La Jolla, California.

unit and under a new staff man has a second intensive experience, entirely similar in format, but differing in the final essential: the observation of how another senior staff man practices medicine. This, then, has been the unique idea which we have held to in medicine: a small, cohesive teaching group, together long enough to become personalities, not faces, and a demonstration by precept of how a senior internist practices medicine.

This basic tenet of the curriculum was responsible for much of the developing pattern of the department. The increased size of the student body required at least five of these units to be in operation at all times. The type of instruction which was implied required broadly trained internists, which meant we had to maintain two distinct groupings of staff within Medicine—the general internists for the junior curriculum and a group of specialists to give strength to the postgraduate and residency programs.

The junior "unit" required a minimum of 120 general medicine beds and sufficient turnover to give these students 50 new patients in a 12 week period. By establishing affiliations with the Kansas City Veterans Administration Hospital and with Menorah Hospital, we were able to gain the additional skillful staff and general medicine beds which were essential.

The Seniors

Medicine, as a department, again was responsible for the students' experience for 12 weeks during their senior year. Here we decided to make a considerable change of pace for six weeks and during this time the senior is assigned to an office in the General Medicine Out Patient Clinic and each day is supervised while he mimics as closely as possible the office practice of medicine. This is, of course, a synthetic effort, but it provides the student with a great degree of personal, initial responsibility. Each will see perhaps 120 patients during this time. To augment the rigid, single-physician instruction of his junior year, the General Medicine Clinic is attended by competent internists and generalists from not only Kansas City, but Lawrence, Leavenworth, Atchison, Manhattan, Osawatomie, Concordia, etc. Every attempt is made to give the student a chance to develop his own personal approach to medicine, but with available supervision.

For the final six weeks that a student has with the Department, he is allowed his choice of any elective. Here he has a chance to work closely with any of the specialty areas: Neurology, Chest, Cardiology, Metabolism, Gastroenterology, Hematology. This is a "unit" experience again, during which time he is assigned to an 11 bed unit, with a single staff man, resident and intern.

Throughout the students' experience on the hospital floors in Medicine, the emphasis is placed on teaching by demonstration—upon preceptorship. To practice medicine, daily, year after year, under the close scrutiny of curious students, inquiring interns, and skeptical residents is an exhausting, productive role. If Medicine has been successful as a teaching unit, it has been because of the original good fortune in having on the staff superb, dedicated general internists.

The first tenet of the basic philosophy then was *small group, single physician, bedside instruction,* augmented by an exposure to office medicine and specialty medicine.

The Second Tenet: The Residency Program

The second tenet related to the residency program.

Just as the Department of Medicine should be the basic strength of medical school, so is the real strength of the Department in its Residents. To build a residency program which would attract the highest quality house staff is the essential requirement of any university teaching program. Without a house staff no student program can possibly be successful. It is the Resident who provides the moment to moment, night and day constancy to the program. These men must be imbued by a desire for excellence, for erudition, for technical skills and with warmth towards patients, and sympathy and enthusiasm for the students. To ask all of this from a man for three long years at a salary which *averages* $1,800.00 a year means that the Department must make the quality of this particular program *superb.* Residents are mature men, all are at least one year beyond medical school and many have had years of practice or military service. They come to the department of their own volition, not as students following the required curriculum. Their own classmates have already entered practice. A good residency is not an easy experience and a good Resident should have little idle time. All of these facts serve to make the Resident in Medicine a member of an elite corps. Such was the philosophy of the Department—and the Residents in Medicine during these years have been a group of remarkably high caliber.

The Specialties

The obligation of the Department to offer a strong residency program was in part responsible for the building of the subspecialty areas. The initial allocation of beds to the General Medicine area for junior student instruction required just half of the bed space assigned to Medicine, the remaining half of the beds were divided into the specialty areas.

An additional 120 beds at the Kansas City VA Hospital were used for the specialties. This division of both staff and beds into equal halves, general

medicine and specialties, has proved a useful balance. A constant criticism of university medicine is its overspecialization. By our division we have maintained the tremendous value of the specialty areas for patient care, residency training, and postgraduate teaching—yet we have had a strong general medicine area as a basis for the students' training.

The Third Tenet: Continuing Education

As the two basic ideas relating to the medical students and to the Residents fell into place, the Department identified its third basic tenet in giving every possible effort and thought to carrying out a "continuing education" program for the man in practice. This area has not been by tradition the responsibility of a medical school. Kansas as a medical school has been a national force in this area, and a primary source of strength in the Kansas program has been the Department of Medicine. Each year the Department has devoted time and talent to this program; the amount of time actually given in planning, organization and participation can only be estimated, however the actual *teaching* time (which would be but a fraction of the overall participation) can be appreciated by a listing of the courses and hours of instruction by Medicine in postgraduate medicine in 1957-1958. The physicians' enrollment in these courses is also listed to indicate another valuation of the effort.

In addition to the courses at the home campus, the Department participated in the circuit courses. The circuit courses have become a popular Kansas tradition. The welding of state and school has merits beyond the original purpose of instruction. The program has a unique significance here in Kansas and the faculty participation is enthusiastic. This fact is even more impressive when one actually analyzes the physical demand on the faculty participants—and the actual man-weeks which the Department contributes to the program.

Course	*Actual Instruction Time* HOURS	*Audience*
Internal Medicine	30	186 (M.D.)
Pulmonary Disease	10	44 (M.D.)
Gastroenterology	13	51 (M.D.)
Cardiovascular	5	166 (M.D.)
Cardiac Auscultation	13	19 (M.D.)
Neurology	6	63 (M.D.)
Electrocardiography	30	755 (M.D.)
General Practice	16	142 (M.D.)
Ophthalmology	2	89 (M.D.)
Cardiovascular Nursing	6	192 (Nurses)
Medical Technology	17	359 (Technicians)
	148	2,066 Professional Personnel

The circuit teams are made up of four members and the circuit takes each man away from the campus for approximately one "work" week, twice a year. In 1957-1958, the Department was represented on the circuit by 12 full time members and each man was "on circuit" twice. This would represent therefore approximately 24 work-weeks, or approximately half of the time of one staff member of medicine. Five hundred and forty eight doctors were reached by the circuit courses.

To indicate the sustained effort of the Department, in the past eight years the School gave 244 postgraduate courses with a total enrollment of 25,044. Medicine participated in 165 of these and reached a graduate student body of 16,398.

The Fourth Tenet: Traditions

As the years passed, the Department evolved several items of "personality" which have served to strengthen it and give a feeling of tradition. These all have been important and have seemed to give "depth" to what was a relatively youthful department.

Ralph H. Major Lectureship, the Kansas Chair, the Annual Breakfast and Picnic.

First among these has been the establishment of the annual Ralph H. Major Lectureship. Beginning in 1954, and each year since, a national figure has been a guest of the Department, giving this lecture honoring Dr. Major. Participants have been Russell Cecil, James Means, Chester Keefer, Paul White, George Thorn, Tinsley Harrison and Eugene Stead. The Lectureship has evolved until it has become an annual June function at which a breakfast is given, the Lecture made, and the Kansas Chair presented to the Department Residents. On the afternoon of this day, the Department gives the annual picnic for friends and members.

The Examination

Another custom, which may provoke more painful memories in the minds of some readers, relates to the Department's strong belief in the value of an examination system. A vigorous program of oral and written examination has been followed through the years. Each portion of the examination has evolved into a standard ritual through the years and the Department has made the quality of these examinations a matter of pride. We have presented Medicine's share of the curriculum with the philosophy that being a physician is a demanding, devoted discipline and that one does not earn this privilege without hard work, attention to detail, mature motivation, intrinsic patient sympathy—and a final demonstra-

tion of factual knowledge by meeting the Department's examination requirements. We have considered the Department's approval of the student after 24 weeks spent with the Department in the junior and senior years, and after an oral and a written examination at the end of both the junior and senior years, as Medicine's documentation that a good physician was being created by the school.

Fifth Tenet: Research

Finally, as these items of concept each fell into place: curriculum, staffing, graduate teaching, acquiring of tradition, the Department matured and strengthened until it was able to begin making significant efforts at the research level. This was deliberately a final and later development; the teaching and patient care responsibilities came as primary obligations. However, by 1956, several major laboratories were operating within Medicine and at the time of this writing, research biochemical laboratories are active within the Pulmonary, Neurology, Gastroenterology, Metabolic, and Liver sections. A strong Enzyme Chemistry Laboratory, an Experimental Medicine section, a Hematology research section and artificial kidney research area are all at the productive stage. A very well developed Cardiovascular Laboratory has evolved. These areas have each taken their place in the teaching effort and at their specialized level are offering instruction to approximately 25 fellows each year in addition to the 24 residents in the clinical services.

Institute for Cardio Pulmonary Diseases
Scripps Clinic and Research Foundation
La Jolla, California

When Driving Watch These!

A "mechanically" safe car with proper safety equipment, however, is no substitute for a "mentally" alert driver who is the decisive factor between careful and careless driving. Psychological causes of traffic tragedies are among the worst hazards with which drivers have to contend, but recognizing them is fortunately more often than not the curing of them. These are among the most common:

1. *Over-confidence.* Taking for granted that pedestrians, other drivers, and the driver's own car and reflexes will all do the right thing at the right time.
2. *Pride in past record and faith in experience.* Many victims of fatal traffic accidents were never involved in a previous accident. As for experience, it breeds bad driving habits as well as good ones.
3. *Minimizing the seriousness of "little" accidents.* Failing to realize that a minor accident could well have been serious, and that the best way to avoid accidents is to shun the practices which cause "little" accidents.
4. *Self-righteousness,* which causes some drivers to try to "teach that wise guy a lesson." What's actually learned, of course, may be tragically different from what was intended.
5. *Impatience.* Taking needless chances, suppressing good judgment, getting into tight situations just to save a little time. This often goes hand-in-hand with inconsiderateness (cutting in too sharply, failing to dim headlights, taking chances that endanger other drivers).

But even drivers who try hard to avoid these psychological failings may be guilty of driving errors without realizing it. According to the 1958 Statistical Report of the New York City Police Department, these were the five driving errors most frequently implicated in New York City traffic accidents:

1. Following too close to another vehicle and consequently losing control contributed to 4,907 of the city's 36,681 traffic accidents that year.
2. Failing to give a pedestrian the right of way: 2,164 accidents.
3. Failing to give another vehicle the right of way: 1,686 accidents.
4. Failing to stop on signal: 886 accidents.
5. Improper turn (363), failing to keep to right (362), and disregard of signs (356) were close contenders for the fifth spot.

Driving faults so blatant that they could be labeled "dangerous driving" were implicated in only 59 accidents.

In the final analysis, the most important factor to steer you straight, is concern with your own condition as well as that of your car. There is no safety equipment that can substitute for careful, mentally alert drivers.

The Juvenile Diabetic

Medical and Psychiatric Aspects Of Regulation and Control

FREDERICK W. BLANCKE, M.D., *Topeka*

On December 17, 1957, a 14-year-old, white, schoolboy was admitted to the Child Study Unit of the University of Kansas Medical Center. The patient was a short, dark-complexioned boy. His facial features revealed a pleasant smile, which at times assumed a deceptive innocence. At other times he revealed a sardonic, negativistic and scornful appearance. To all questions he answered: "that is my own business."

It was learned that the patient needed 80 units of NPH Insulin, daily, for control of his diabetes, that in spite of this, his diabetes was uncontrolled most of the time. He would run away from home periodically, he would overindulge in his eating habits, he would manipulate his insulin dosage or dilute his urine, he was incorrigible in his behavior and there were violent conflicts with the five siblings at home.

There has been a good deal of difficulty between the insecure parents. Between them there were violent outbursts of anger to the point of talking about separation. The child was often exposed to these arguments. The father was hospitalized at a psychiatric hospital for a period of three months during the early part of 1957. The family moved to Kansas City, Kansas, following his discharge. During the hectic period of re-establishment of this family unit in Kansas City, Kansas, the diabetes of our patient was discovered. This resulted in establishment of a pattern of over-protection at home, overwhelming our patient with care. This he strongly resented. Following this, and perhaps in reaction to his response, the mother became overly rejecting, complaining of the additional work that the boy's illness imposed on her and the cost this illness involved. She withdrew her affection and support from him.

With the combination of family strife, the blow to his self-esteem in knowing that he had a chronic illness which set him apart from other children, and the inconsistent reaction of the family to his illness, the patient's behavior became increasingly worse.

While the boy was in the Child Study Unit of K. U. Medical Center, his bloodsugar fluctuated between 500 milligrams per cent and 72 milligrams per cent. Sugar and acetone were irradically present in the urine, and on three occasions he suffered hypoglycemia with a fall in bloodsugar as low as 21 milligrams per cent. He ran away from the hospital many times, always to return. He indulged himself in knocking doorlocks off the ward doors and spraying water down the corridors. After three months he was dismissed from the Child Study Unit but readmitted two weeks later. His school had not accepted him because of his behavior. The parents were openly hostile to him and the boy himself pleaded with the hospital to be readmitted. Arrangement was made for long-term treatment at the Kansas Treatment Center for Children in Topeka, Kansas, on July 8, 1958.

Juvenile diabetes is frequently a disturbing factor in the life situation of the growing individual. Its discovery is often followed by delinquent behavior and psychoneurotic symptomatology. Deep-seated character problems may become activated. The general attitude of the family and the physician are discussed —how to deal with the emotional, delinquent and metabolic complications of this illness.

Extensive psychiatric and medical evaluation began, social work with the family opened, and a treatment program developed. Bloodsugar studies revealed serious fluctuations, as high as 650 milligrams per cent on several occasions and as low as 100 milligrams per cent. We discovered at last that when not observed the patient would try to cut down on the amount of insulin and to dilute his urine. The management difficulties in relation to his behavior problems paralleled the difficulties in the control of his diabetes. We realized that we were dealing with metabolic, emotional, and delinquent problems in relation to control of the diabetes.

The psychiatric diagnosis established was: passive aggressive personality, aggressive type. The medical diagnosis was: diabetes mellitus, juvenile type.

This paper was presented to the American College of Physicians, the Regional Meeting in the Town House Hotel, on Friday, March 4, 1960, Kansas City, Kansas.

Five Per Cent Population

Of the approximately five per cent of the population of the United States of America which is homozygous for the recessive gene of diabetes mellitus, one-fifth are known diabetics. Some 100 thousand patients may be classified as "juvenile diabetics," when the illness is detected at the age of 15 years or under. There are some distinct differences between adult and juvenile diabetes. For instance we know that the area of safety between coma and hypoglycemic shock is narrow, much narrower in the juvenile diabetic than in the adult. We are also familiar with the explosive ketosis in the juvenile, ending rapidly in coma and sometimes death.

We internists in general feel that we are successfully treating our patient when we render him normoglycemic and normoglycosuric. This control however often results in emotional decompensation of this "diabetic robot" which will not be revealed in our offices because our sensitivity of observation may not be trained in this direction.

The importance of life experiences in the onset and course of diabetes mellitus has been a topic for discussion since Thomas Willis, some 300 years ago, noticed the sweet taste of urine of a few patients, and concluded that this disease was caused by a prolonged period of sorrow. William Menninger pointed out in 1935, that there is a correlation between changes in diabetic control and changes in mental states in a number of his patients. Marble-Fisher-Katz-Hinkle, and Wolf reported series of juvenile diabetics with severe emotional problems related to the diabetic illness. In these series from twenty-five to forty per cent of juvenile diabetics, chosen at random, experienced severe adjustment problems.

The diabetes of our patient was discovered during a period in his life in which his family was openly hostile toward him and had withdrawn love and affection. The literature continues to report cases of this nature. Both World Wars failed to show any correlation between severe stress of the soldier and the onset of diabetes.

Though extensive studies have failed to substantiate a "diabetic personality profile," the life stress is particularly taxing on our juvenile population. Metabolic changes in diabetes secondary to life stress are well documented. Psychiatric responses to the onset and course of diabetes also occur. The psychiatric responses however in turn constitute one of the main obstacles in "controlling the juvenile diabetic."

In stress, the diabetic may lose as much as 30 Grams of glucose in the urine per hour. Thirst, polyuria, ketosuria and dehydration may start during and after a conflict situation. Provoked anger or nonverbalized rage of the diabetic causes the bloodsugar to fall, blood ketones to rise, diuresis to occur, and the RQ to fall toward 0.7. A similar response indeed as during fasting. Hinkle observed that these patients react to stress as if they were deprived. There is a similar reaction of metabolism to withdrawal of food as to the withdrawal of love and security.

The environment of the juvenile diabetic is structured with the parents, the siblings, and his friends. His disease is controlled with diet, insulin, regular urine examinations.

Parents

When the patient comes under treatment he will transfer to the physician the attitude and feelings with which he faces his parents. Unless the physician can learn to regard his patient's behavior as a symptom of the illness he will not be able to establish an effective therapeutic relationship. A unique relationship is needed. The physician must be able to recognize how the patient relates to the parents and the parents to the patient. The physician cannot afford to become angry at his patient like the parents and thus to induce protest against the therapeutic regime. He must know how the parents react to the illness in order to prevent duplication of their errors and patterns. After the discovery of the diabetes in the family the expression of the familial emotional difficulties is reflected in the management of the patient. The diet, the daily insulin injections, the urine examinations, weight control, all attain an irrational importance to the entire family and are often used to express pre-existing emotional difficulties within the family.

There are four major reaction patterns within the family: 1) *Danger Alerted Pattern:* all the activities, the regulation, the diet, and symptoms are anxiously watched. All the horrors of blindness—hardening of arteries—amputation—coma are a nightmare for the family. The child is continuously in a flight or fight reaction. His increased bodily concern renders him a psychological invalid. His dependency upon the parents may be increased beyond tolerance and his anger will be expressed against the parents and their control. 2) *Indulgent-Dedicated Pattern:* the parents, particularly the mother, feel they are somehow responsible for the child's illness, such as a fall in the past, a negligence on their part are irrational causes for the child's illness. This guilt and self-blame is expressed in the control of the child. They are waiting for the reward of their efforts to control the child in miraculous eventual recovery. The child will exploit this situation and develop the equally unfounded inner conviction that the parents are really responsible for this, his disability and

he will react according to this belief, manipulating the guilt of the parents and receiving gain from his disease. 3) *Perfectionist-Punitive Pattern:* control is achieved at all costs. The diabetic robot is never allowed to forget that he is a diabetic. His individuality is eventually submerged. Open rebellion is a protest that we see in juvenile diabetics admitted in ketosis, coma, or delinquent behavior. Menninger's patient told him "she would rather die than live such a restricted life." Her prevalence prevailed and she died in coma. The parents are boasting of their own accomplishment to control their own child, at the same time depriving the child of its own accomplishment in learning to take care of his disease. 4) *Neglectful-Disinterested Pattern:* this is unfortunately the largest group. The child is a burden who limits the parents' irresponsibility and self-satisfactions. The parents actually resent the child and the costs of his medical care. The onset of the disease is an additional blow to them, the parents, and another undesirable trait of the child.

Siblings

The siblings usually express a great amount of hostility toward the child that needs so much special attention. Their attitude is often extremely traumatic to the juvenile diabetic.

Family Members

Our patient's grandfather lived 20 years with diabetes and the patient told me several times that he certainly did not need regulation when his grandfather lived that long without any insulin or diet. The family members with diabetes are identification subjects for our patient. This is an important point in taking the history of the diabetic juvenile patient.

Friends

The juvenile hides the syringe very often and hides any possible evidence of the disease. He is afraid to be different, will often be excluded from gangs as being a "sissy," dependent on a syringe. Fantasies of not being masculine are very common in boys. Subcutaneous fibrotic nodules as a result of insulin injections are embarrassing to the girls.

Patient

To have an incurable disease without symptoms, to be an economic burden on the family, dependent upon injections and diet, be controlled by the parents, indeed this is a depressing fate.

The patient often has an irresistible longing for dependency in a face of this difficult future, or shows an open hostile reaction against the entire world that gave birth to him with a damaged body. His pride is hurt and his feelings of inadequacy and inferiority are awakened. Depending upon his reaction to the attitudes of the physician and the parents toward his disease he may have fantasies that he is going to die rather soon, that his body is like a house that may tumble down any minute. More often than many physicians suspect there is an underlying mood of dejection and hopelessness in the juvenile diabetic patient.

Food

The tense, depressed, and lonely adult may eat a piece of candy or some slices of cake. The juvenile in a similar situation may eat everything in the icebox and everything he can buy in the drug store. The "raid on the icebox" after a difficult situation is almost as characteristic a symptom as polyuria in the adult. This increased food intake just before the onset of ketosis and coma, creates the erroneous belief that overeating is causing this ketosis. The antiketogenic effect of carbohydrates has been well demonstrated. The argument between "metabolic perfectionism" and "dietary liberalism" is largely academic as you well know. Seventy per cent of the members of the diabetic association subscribe to the concept of "normoglycemia" as major objective of treatment. Twenty-three per cent have as goal "aglycosuria." Reports from large clinics indicate that only 13.5 to 22.4 per cent of their patients have been well controlled, as measured by normoglycemic standards. In effect, interviewing these patients very extensively, most patients seem to be on a free diet, regardless of what thir physician believes that they are eating. We have found in our studies that control of our diabetic juvenile, with restriction of the diet may cause severe emotional reactions. The restriction of food has actually the opposite result. His friends will get "special food" as chocolate bars, etc., for this "poor, deprived, hungry, and starved child." The patient now feels that he really has reason to be angry at the world and he will express his anger in the food raids that we all know. His food is given to him with the label that it may become poisonous when he eats too much of it. He in turn will use this food as a weapon to protest against his passive role in the family and to assert his independence.

The degree of success or failure of the diabetic of the dietary regime will depend upon the degree to which the physician understands how much his patient eats, likes to eat, and needs to eat. A free discussion is needed of the patient's appetite and his need to satisfy this.

In view of the statistical data, we do not stress the importance of a "rigid dietary control."

Physician

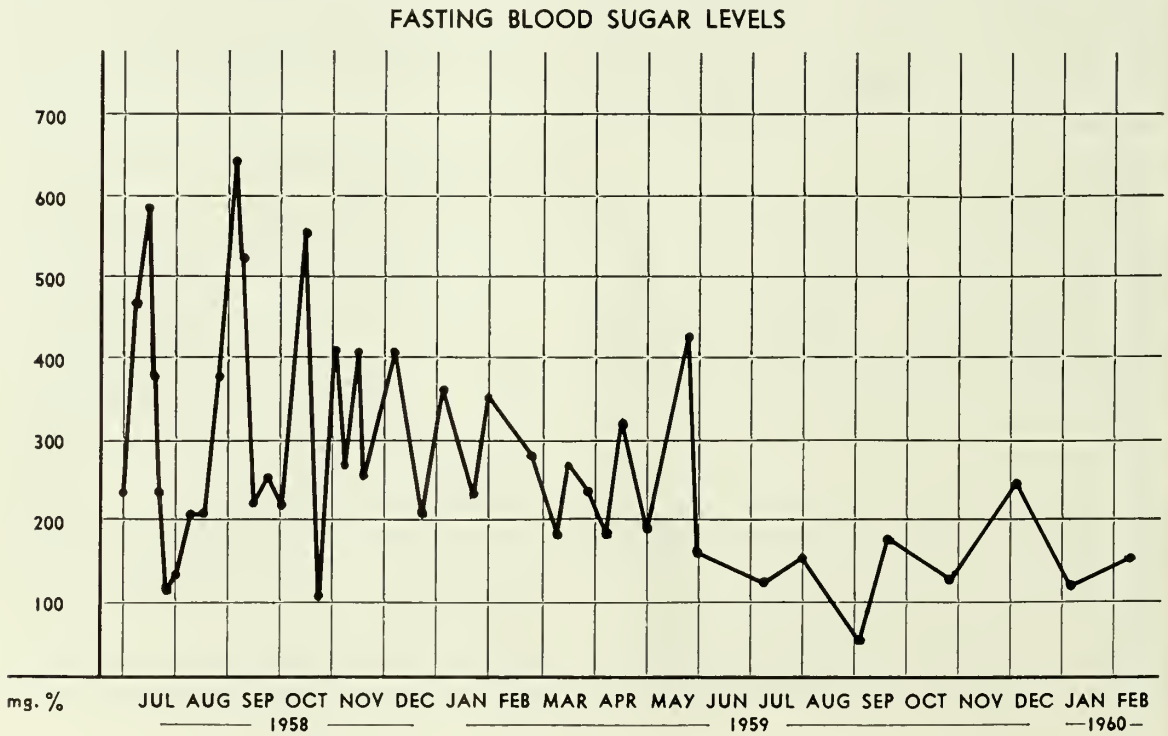
Finally we have to define the physician's role in the management of the patient's disease. A few simple rules are as important as the dose of insulin.

We do not unite with the parents against this child. We do not become angry about irregularities in the control. We do not compare our patient with a nonexisting ideal patient. We do not put the patient in such a position that he has to lie to us about discrepancies in statements by and about him. We do not retaliate to the patient's anger. We do not minimize nor exaggerate the importance of the disease. We do not give academic dissertations about the disease, and explain instead that insulin is one more tool that man has available to make life liveable. We realize that the patient does not feel sick but still needs treatment. We recognize the patient's achievement. We recognize that not all patients do equally well. We evaluate the degree of dependency the patient can tolerate without a need to assert his independence in an oppositional manner. We encourage social adaptation in group belonging and diabetic camps. Finally, the most important is that we accept him as a person and not as an object to be regulated.

Ketosis

A few words about the ketosis: nearly all juvenile diabetic coma is caused by the patient knowingly and purposefully disrupting his regulation. First goes the diet, next the insulin and last infection, often because the syringe was not sterilized. The purpose of this may be suicidal tendencies, withdrawal and refuge in the hospital and away from the conflict, manipulation of the parents or resentment about imagined or real rejections. In treating the juvenile diabetic it is very important to perform bloodsugar tests and urinalyses. However it is equally important to recognize the importance of words. Words are as important as the level of the bloodsugar of the patient. We listen to our patients. We listen particularly to two things: 1) We recognize early signs of protest: the breaking of appointments, unreasonable demands, unjustified criticism or revolt against the parents. 2) Angry—fearful—resentful—lonely and dejected feelings are *premetabolic signs of impending ketosis.*

Since his admission in the Treatment Center for Children our patient has steadily improved. His own intense aggressive feelings were projected toward me and I was seen as a very dangerous person, a dangerous person trying to control him with a needle and with insulin and a diet. Gradually he was able to express anger and hostility toward me. He is able now to verbalize his anger instead of acting out his anger in his diabetic disease. There has been no use of his diabetes to punish himself or others. Five months ago the patient expressed the wish to have a diet sheet made out. Our dietician prepared a sheet for him and the patient presented this to his mother to express his wishes to be reconciled with her. This approach toward his mother was quite characteristic



for this group of patients, that is, through the diet. The mother understood this symbolic message and has since been quite cooperative in working with our social worker. At present his diabetes is controlled with 50 Units of NPH Insulin and a free diet. His bloodsugar is fluctuating now between 280 milligrams per cent and 120 milligrams per cent with few hypoglycemic reactions *(Figure 1)*. His urine sugar is usually between four plus and negative. At no time has there been ketosis during the last six months. The patient is injecting his own arm with insulin under supervision and performs his own urine examinations.

The management of his diabetic disease is intrinsically interrelated with the psychotherapeutic management of his emotional problems. It is impossible in this type of patient to separate the two diseases.

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CHANGES OF ADDRESS

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Childhood Nephrosis

Five Years' Experience in Treatment

RALPH R. HALL, M.D., *and* ROBERT C. FAIRCHILD, M.D., *Kansas City*

THE EXPERIENCE PRESENTED IN this paper is based on the long-term treatment of patients with childhood nephrosis seen at the University of Kansas Medical Center and the Kansas City Children's Mercy Hospital Renal Disease Clinics* over the five year period from September 1954 to September 1959. The criteria for the diagnosis of nephrosis in these children were as follows: edema, albuminuria, hypo-albuminemia, and hypercholesterolemia. The diagnosis of childhood nephrosis was viewed with skepticism if there were any significant initial or persistent elevation of blood pressure or if there were hematuria of any amount.

During the five year period, 21 children with nephrosis have been observed for varying lengths of time as shown in *Figure 1.* Of these, four children have expired and 17 have survived. Seven children are in remission and on no therapy whereas 10 continue to show either hypo-albuminemia, hypercholesterolemia, or albuminuria and are at present on therapy. The age at which these children first had clinical symptoms of nephrosis is shown in *Figure 2.* The majority of the patients at this clinic presented with edema during the first four years of life, the extremes being seven months to 14 years of age at onset. There is no apparent difference in the course, symptomatology or prognosis in the different age groups that can be seen to date.

Months of Observation	*No. of Patients*
48 to 60	5
36 to 47	0
24 to 35	4
12 to 34	7
Less than 12	5

Figure 1

Much Is Not Known

There is a multitude of unanswered questions concerning nephrosis. Foremost among these is a definite etiology. Lang, *et al*[1, 2] have left little doubt that the majority, if not all, of the cases of this disease seen in children are of the antigen-antibody type." The precipitating factor in the cases seen in the aforementioned clinics for the most part remains in doubt. One child developed symptoms a short time following an insect sting and relapsed later following a sting by a similar insect. There are two children, one of them deceased, but the other living and attending clinic at the present time, from the same family.

1. The results of the use of Triamcinolone in the treatment of nephrosis in children who were maintained on daily small doses for periods of at least one year compare favorably with the results from the use of other corticosteroids.

2. The initiation of therapy with Triamcinolone was accompanied by a substantial and prompt loss of weight in each instance in which it was substituted for Prednisone. This probably represents loss of water which was retained while on Prednisone.

3. No adverse side effects which necessitated the discontinuance of the drug were found in those children treated with Triamcinolone. In the dosage used for maintenance over long periods of time, Triamcinolone appears to be a relatively innocuous steroid in the treatment of nephrosis.

4. No conclusions may be drawn from our experiences with Diuril or paracentesis in the production of diuresis in children with nephrosis.

Prior to February 1958 the children with nephrosis had been treated with Cortisone or ACTH for which prednisone was later substituted when it became available. The appearance of cushinoid facies, hirsutism, and glycosuria with these steroids was almost universal. Intermittent steroid therapy was instituted in an effort to decrease these side-effects without much success. Therefore, when Triamcinilone* became available in February 1958 a new therapeutic regime was followed. The patient with edema was treated with four mg. of Triamcinilone four times a day until diuresis occurred. The dosage was then

Department of Pediatrics, University of Kansas Medical Center, Kansas City, Kansas and Children's Mercy Hospital, Kansas City, Missouri.

* Sponsored by the Greater Kansas City Chapter of the National Kidney Disease Foundation.

* Aristocort®, Lederle Laboratories.

decreased to two mg. four times a day and then adjusted to two mg. of Triamcinilone two to four times daily depending on the patient's clinical response and the size and age of the child. Therapy has been continued until the children have been free of proteinuria and edema for at least one year; or if the year is completed during the season when respiratory infections are prevalent, medications are continued until the risk of such infections is reduced. In addition, broad spectrum antibiotics have been given daily with Triamcinilone. The antibiotic dose is usually kept small and the mother is instructed to increase the dose to therapeutic levels when the first symptoms of any infectious process appear. The patients are also maintained on a restricted salt diet. Since this type of therapy was instituted, 15 children have been maintained on Triamcinolone.

Only three children of the eight treated with Triamcinolone who had become free of proteinuria for a period of six months or more have again developed proteinuria. The first one, a 17-year-old white female, developed proteinuria two and a half months following the cessation of steroid therapy, which had been maintained for a period of one year without any evidence of albumin in the urine. She has again been started on steroid therapy. The second, a 13-year-old boy, had the onset of proteinuria after approximately nine months of therapy with Triamcinolone at the dose of two mg. four times

AGE AT WHICH SYMPTOMS OF NEPHROSIS FIRST NOTED

	Number of Cases
Less than 1 year	1
1 to 2 years	2
3 to 4 years	2
4 to 5 years	6
5 to 6 years	1
6 to 7 years	1
7 to 8 years	1
8 to 9 years	2
9 to 10 years	1
10 to 11 years	0
11 to 12 years	1
12 to 13 years	0
13 to 14 years	0
14 to 15 years	1
Total	21

Figure 2

a day. The third, a six-year-old boy, developed recurrence of edema and albuminuria five months after cessation of therapy. One additional child has had urines positive for albumin and has had hypercholesterolemia and mild hypoproteinemia without edema, despite steroid therapy. At the writing of this paper, five other children have had their Triamcinolone discontinued after a year or more of therapy and ten

NUMBER OF DAYS OF STEROID* THERAPY REQUIRED TO INITIATE DIURESIS

Days of Therapy Required	*Number of Times Diuresis Started on This Day*
3rd day	1
5th day	1
6th day	1
7th day	0
8th day	2
9th day	5
10th day	10
11th day	6
12th day	1
13th day	2
14th day	0
15th day	0
16th day	0
17th day	0
18th day	1
Total	30

(Four children failed to respond to steroid therapy.)
* Represents both ACTH and Adrenal Steroids.

Figure 3

children are still being maintained on Triamcinolone. All of these ten children have been on therapy for at least nine months. There have been no serious complications from the use of steroid therapy in this group of children.

Hair Growth Side Effect

The only adverse effect has been the growth of a small amount of hair on the face and trunk. One small girl, who had persistent pyelitis and was on relatively large doses of Triamcinolone, four mg. four times a day, developed moon facies and some moderate increase in truncal obesity and abdominal striae. Following her diuresis and the clearing of the urinary tract infection, the dose of Triamcinolone was decreased to two mg. three times a day with subsequent disappearance of all cushinoid appearance with the exception of her increased amounts of hair. Four children have been seen in relapse and initially treated with Triamcinolone in dosages of four mg. four times a day. All of these children had satisfactory diuresis with this regimen. Statistics on diuresis and its relation to steroid therapy are presented in *Figure 3*. One additional child was given ACTH with her Triamcinolone and Diuril until she was free of proteinuria. There have been no instances of increased blood pressure while on therapy with Triamcinolone and there have been no problems with electrolyte balance. Gastrointestinal symptoms have been practically non-existent. One nine-year-old boy who had a previously perforated duodenal ulcer while on Cortisone, has been on Triamcinolone now for one year. He has been given anti-

acids after meals and between meal feedings. He has had no dyspepsia nor abdominal pain.

One interesting aspect of Triamcinolone therapy was the initial drop in weight occurring in the first two weeks of therapy. This was particularly noticeable in children that were receiving Prednisone and who were switched abruptly to Triamcinolone *(Figure 4)*. Some of the weight loss occurring later in

WEIGHT LOSS IN FOUR MALES FOLLOWING CHANGE FROM PREDNISONE TO TRIAMCINOLONE WHILE IN REMISSION

	Wt. Before	*Wt. After*	*Interval After Changing Drugs*
C.B. ...	39 lbs.	36 lbs.	2 weeks
J.C. ...	45½ lbs.	41 lbs.	2 weeks
L.C. ...	45 lbs.	41 lbs.	2 weeks
R.W. ..	111 lbs.	106 lbs.	4 weeks

Figure 4

therapy might possibly be due to the catabolic effects attributed to Triamcinolone. We have not observed muscular weakness as a side effect of this type of therapy. We have been on a constant alert for this as well as for evidence of protein wasting since DuBois and others[5, 6] have reported this complication of Triamcinolone therapy. Potassium Chloride supplement was given initially to all patients on steroids and has since been discontinued on most of these patients. It is to be noted that when Triamcinolone was discontinued in five children previously mentioned, it was done so by abruptly stopping the drug. Only one child had any difficulty following this procedure. Three days after its discontinuance he suffered headaches, nausea and vomiting for two days. Whether this was caused by the discontinuance of Triamcinolone or was simply coincidental, is a matter of speculation.

Paracentesis Last Done

Since 1957 there has not been occasion to do paracentesis. Diuril® has been given to only one child during her initial attack. This was followed by diuresis, although albuminuria continued. It was possible to prevent this child from gaining excessive weight by giving Diuril three days per week until her albuminuria ceased. This child, whom we mentioned previously, was found to have a genitourinary tract infection, which cleared when treated with antibiotics. Following this therapy she has been free of proteinuria and has been maintained on small doses of Triamcinolone with only traces of albumin on rare occasions in her urine.

It has been felt by some that diuresis was occasionally initiated by paracentesis. Recent experimental evidence supports this hypothesis in ascites due to cirrhosis.[7] Since the beginning of this study, 26 paracenteses have been done. In ten of these instances the child continued to lose weight following this procedure or began to lose weight at the time of paracentesis. Three of these were noted to be losing fluids from the paracentesis site and Cortisone or ACTH was being administered at the time 23 paracenteses were done. Of the three paracenteses done at a time when steroids were not being administered, one child began to diurese at the time of the paracentesis and continued to do so for a number of days. It is, therefore, difficult to judge the significance of the paracenteses as a precipitating factor in the diuresis.

Since the inception of these Renal Clinics, four of the 21 patients seen with a diagnosis of Nephrotic Syndrome have expired. All of these died of renal failure and in no instance was infection a contributing cause. This is approximately 19 per cent of the total and compares favorably with other studies on nephrotic children, seen during the first six months of illness, on a larger series of patients.[8] It is significant that of the four children who expired, three never responded to therapy to the extent that they became free of albuminuria. Their course was one of persistent albuminuria and edema and they later developed azotemia and expired as the result of renal failure. The fourth child had had two complete remissions during which time her serum cholesterol and proteins were normal, and there was no loss of albumin in the urine. She subsequently became refractory to steroid therapy and died in renal failure. The pathologist's description of the kidney in each of the four cases as seen with a light microscope was consistent with subacute or chronic glomerulonephritis.

Department of Pediatrics
University of Kansas Medical Center
Kansas City, Kansas

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Adenoma of the Pituitary Gland With Acromegaly

Edited by C. C. JONES, M.D.

Dr. Boley (Moderator): This patient had an uncommon tumor but one that produced certain very characteristic changes in the patient. Detection of these changes should allow the astute clinician to make an accurate histologic diagnosis. It is particularly important to consider this tumor at this time in the light of newer diagnostic methods and therapy.

Mr. Scott (Medical Student): The patient is a 19-year-old white girl who was admitted for the first time to the University of Kansas Medical Center on September 24, 1959, with a chief complaint of failing vision. In July of 1958 she visited an optometrist in her home town because of intermittent episodes of double vision. He told her that she was blind in both her right visual fields. She did not see a physician at this time, and her vision did not improve. A year and a half before the present admission her menstruation became scanty and irregular, and a year before admission it ceased altogether. No other changes were noted until about one month before the present admission when she visited an osteopathic physician because of a "cold." This doctor noted that her hands and feet seemed larger than they should be, and upon examination of her visual fields he found that she had a bitemporal hemianopsia. Radiograms of the skull revealed an enlarged sella turcica, and the girl was referred to the University of Kansas Medical Center.

Positive physical findings on admission were few. She had a mild prognathism and noticeably enlarged hands and feet. Her temporal visual fields were reduced by the confrontation test, and this finding was verified later on more careful examinations of her visual fields *(Figure 1)*. There were no reflex changes. There were no secondary sexual changes. There was no loss of axillary or pubic hair; the blood pressure was normal; and she did not have signs or symptoms of hypoglycemia.

Dr. Williamson: A year ago this patient had to cut her rings off because her fingers had become too large, and she had to buy shoes two sizes larger. The changes in her hands and feet are early, but I think they are quite definite and significant particularly since there is a history of progression. The patient had bitemporal hemianopsia which was absolute in the right eye and partial in the left eye. She had some optic atrophy in the right eye as evidenced by paleness of her right disc. She had a peculiar muscle imbalance in her eyes that can be demonstrated, and the double vision that she complained of was on the basis of this muscle imbalance.

Medical Student: Does she have headaches?

Dr. Williamson: She does not have headaches. She did have two strange episodes in which she apparently became confused and dazed, carrying out automatic acts and then not recalling them. This behavior suggested psychomotor seizures, and the electro-encephalogram verified abdominal spike activity from the temporal lobe. She was placed on dilantin before surgery. There was no evidence of diabetes insipidus.

Mr. Scott: Ophthalmic, gynecologic, and endocrinologic consultations were arranged and many laboratory tests were performed on this patient. In general, most of the special laboratory tests seemed to indicate hypopituitarism. The values of the radioactive iodine uptake and the protein-bound iodine determination were below the limits of normal and suggested hypothyroidism. The urine follicle-stimulating hormone (FSH) value was 6.6 mouse units which is below normal. The urea clearance test was increased, and according to Dr. Bolinger this finding is supposed to be a sign of increased growth hormone. The upper limit of normal is 125 per cent of the average and this patient had 141 per cent. A glucose tolerance test was normal.

Cancer teaching activities at the University of Kansas Medical Center are aided by grants from the National Cancer Institute, U. S. Public Health Service, and from the Kansas Division of the American Cancer Society. Dr. Jones is a trainee of the National Cancer Institute.

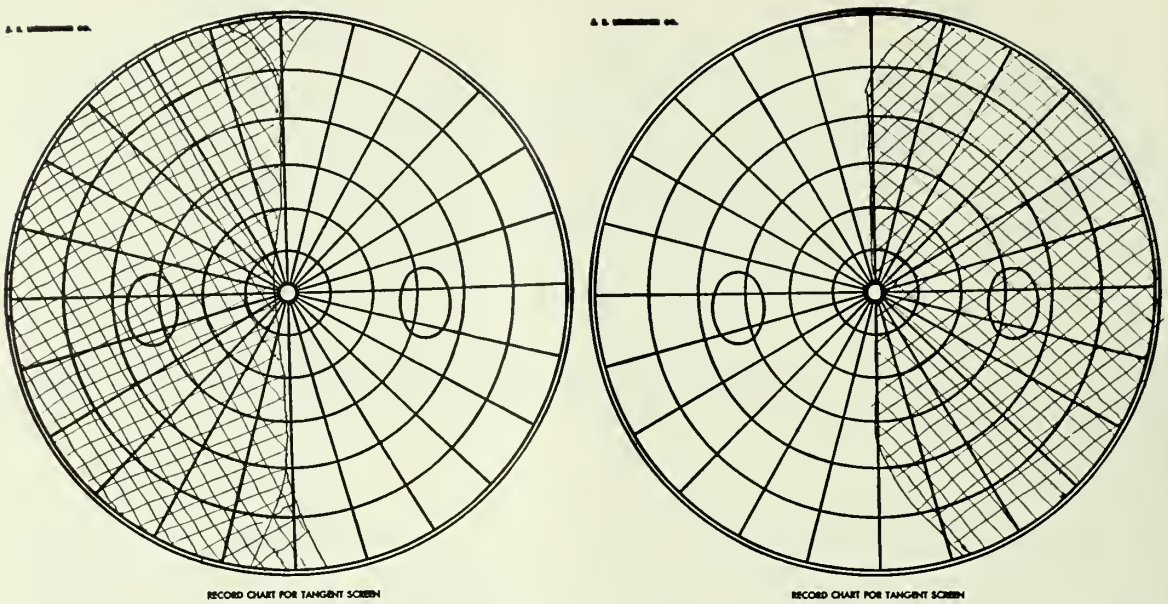

Figure 1. Record of visual field changes on admission showing almost complete bitemporal hemianopsia. *A* is the right visual field and *B* is the left.

Dr. Boley: May we see the x-rays?

Dr. Gantioqui (Radiologist): The interesting radiologic changes are mainly confined to the skull *(Figure 2)*. The sella is enlarged and is increased in both width and depth. There is thinning of the dorsum sellae. The anterior and posterior clinoid processes show slight elongation and thinning, but they are not completely eroded away. The convolutional patterns of the brain are quite prominent but are not outside the limits of normal. No unusual calcifications are demonstrated.

Figure 2. Roentgenogram of the skull showing enlargement of the sella turcica. There is erosion of the anterior and posterior clinoid processes.

A right carotid arteriogram shows good filling of the anterior and middle cerebral arteries on the right side of the brain. The carotid siphon is somewhat straightened, and there is slight elevation of the right anterior communicating artery *(Figure 3)*. These findings are indicative of an intrasellar tumor.

Dr. Boley: Are there any bony changes in the face or the hands and feet of this patient?

Dr. Tice: Changes in the facial bones and the mandible are not detected on the x-rays in the present case. However, radiographic enlargement of the jaw, frontal bones and frontal sinuses are frequently seen in the acromegalic patient.

Dr. Williamson: This girl had the early classical signs and symptoms of acromegaly diagnosable by inspection and history. There was an expanding intrasellar lesion that was causing bitemporal hemianopsia and optic atrophy. These findings indicate that she undoubtedly had a functioning tumor of her pituitary gland which was causing the acromegaly, and by all rights this tumor should be an eosinophilic adenoma. We had the patient admitted to the hospital in order to prove this clinical impression. Endocrine studies confirmed hypopituitarism with the one exception of an increased urea clearance test which is supposed to be a sign of increased growth hormone. Acromegalics and pregnant women, according to Dr. Krantz, are the only two conditions which have in-

creased urea clearance, and both have increased production of growth hormone from the pituitary gland. This patient's radiograms confirmed an intrasellar tumor *(Figures 2, 3)*. The arteriogram *(Figure 3)* confirmed the fact that the tumor had burst out of the sella, and visual field tests *(Figure 1)* indicated that it was compressing the optic chiasm. Taken together, these findings are pathognomonic of an eosinophilic adenoma compressing the chiasm.

The only question we had for discussion following

Figure 3. Right carotid arteriogram (frontal view) showing elevation of the right anterior communicating artery by the intrasellar tumor.

her work-up was whether she should receive surgery or irradiation therapy. These tumors are benign, and they do respond to irradiation. Usually if we see a patient early before any loss of vision has occurred, we elect to give x-ray therapy and to follow their visual fields. There are many patients who with x-ray therapy alone remain well a large number of years—even perhaps a lifetime—and never need surgery. If, however, there is compression of the optic chiasm, we feel that immediate relief of pressure from their optic nerves is necessary, and this can be done only with surgery. Radiation is contraindicated in the latter situation because the initial reaction of the tumor to radiation is swelling, and this may cause further compression of the optic nerves and produce blindness. We have had several patients who in three days of x-ray therapy lost their vision due to edema in the tumor causing pressure on the optic nerves. These were then operated upon.

Having made the decision to operate, the next vital question was: should the patient have partial removal of the tumor to preserve vision and allow the tumor to continue to give her some necessary pituitary function while possibly allowing her acromegaly to progress, or should she have a total hypophysectomy? Several years ago we would never have considered total hypophysectomy, but now several investigators[1, 2] claim that all acromegalics should have total hypophysectomies. It is stated that with this treatment the acromegaly is reversible. This was new to me, but I believe that it is true. Discussing this case with Dr. Bolinger and some of the other medical men, we decided that she should have a total hypophysectomy in order to cure her acromegaly while correcting her visual difficulties. We now can maintain a hypophysectomized patient for a normal life expectancy relatively easily with cortisone and thyroid extract.

At operation the surgical incision was placed entirely above the hairline. The large frontal sinuses had to be transected in the craniotomy for exposure.

We saw that the right optic nerve was elevated by the dome of the tumor so that it arched upwards at a right angle from underneath the anterior clinoid process and made another 90° angle over the dome of the tumor. Instead of being normally round, the nerve was flattened like a ribbon indicating serious compression. I think that if we had irradiated the tumor with this finding she would have lost her vision in the first day or two and may not have regained it, so our decision to operate on her was a good one, I think. The tumor freed up nicely from the optic nerves and from the optic chiasm. Down in the sella turcica the tumor was soft and mushy, and it was easily removed by suction. We removed the tumor completely from along the lateral side of the sella and almost completely from beneath the chiasm. Then, in the depths of the sella we saw a small white object attached to a stalk that almost certainly was part of the normal pituitary gland. It was in the shape of a pancake partially hidden by the optic chiasm. Ordinarily in these operations the surgeon cannot distinguish tumor from the normal pituitary gland, but in this particular instance we thought that this was most certainly a part of the pituitary gland, so we terminated the procedure and contented ourselves with a partial removal. It is quite possible that she had a tumor of the anterior lobe that had broken away from and compressed the remainder of the pituitary gland. With removal of the tumor while leaving some normal pituitary and an intact pituitary stalk, I hope that she might regain some pituitary function. We removed approximately 95 per cent of the tumor. She still has tags of tumor up

under the optic chiasm and under the carotid arteries. I think she still has the posterior lobe of the pituitary gland, the stalk and part of the anterior lobe with it, all of which were flattened and compressed by the tumor. Had we continued with our plan to do a total hypophysectomy, we would have curetted all tissue from the sella and then cauterized it with Zenker's solution.

Dr. Boley: Dr. Helwig, would you show us the tumor?

Dr. Helwig (Pathologist): I will do the best I can. I am reluctant to see this patient and then show the histology of this tumor, because they do not entirely jibe. In cases such as this, however, I always tend to believe the patient.

Dr. Williamson: I might say in your defense, Dr. Helwig, that this tumor was cystic and a lot of it went down the sucker; some went to Dr. Boley's lab; some went to Dr. Steegmann's lab, but a lot of it went down the sucker. The pathologists have actually only a part of this tumor.

Dr. Helwig: Thank you for this information, Dr. Williamson. A high power view of the tumor shows that it is composed of uniform sheets of tightly packed cells *(Figure 4)* which, for the most part, look like the ordinary chromophobe cell that may be seen on the ordinary hematoxylin and eosin stain. However, I think it must be remembered that the granules which are present in the acidophil or chromophil cells may be present in the form of a most minute dust, and under oil emersion I could see some tiny dusty granules in certain of these cells. Now, as you know, Pearse[3] describes a method using the periodic acid Schiff (PAS) stain technic with the counterstain of orange G to demonstrate acidophilic granules. The normal chromophobe adenoma is negative both for the PAS stain and for the orange G stain. Orange G will bring out the acidophilic granules or will stain the acidophil cells orange. The PAS technic stains basophils. I found some positive orange G staining cells in the Bouin's-fixed material, although all fields are certainly not convincing. It is quite difficult to make out the granules in most places. Occasional alpha cells are present that do have fine granules, and I think that there are definite acidophilic cells here. They certainly are not, by any matter of means, predominant. Moreover, there are beta cells as well that show little droplets of polysaccharide stained by the PAS technic. The predominant cell throughout, however, is the chromophobe.

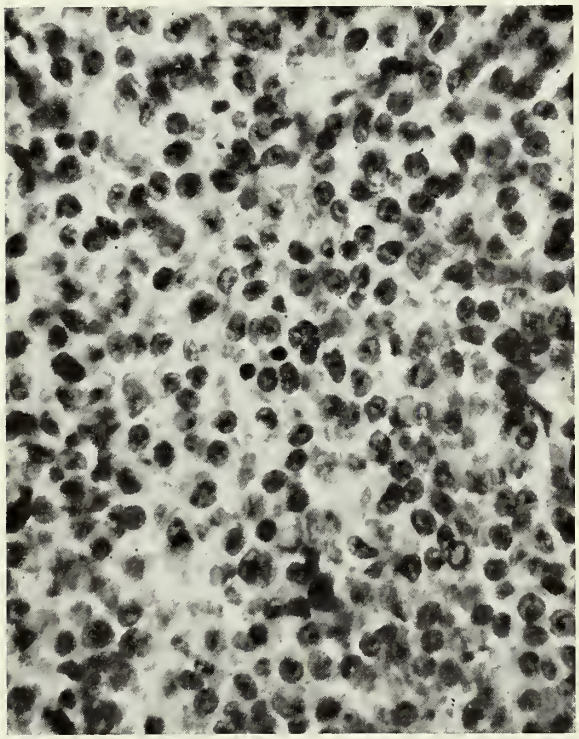

Figure 4. High power magnification of a representative area of the pituitary tumor. The cells are predominantly chromophobes. ×540.

I have had very little experience with pituitary adenomas. They are not a common tumor in the type of hospital where I work, although they constitute about 20 per cent of all intracranial neoplasms. At least half of all the pituitary tumors are chromophobe adenomas. About 35 per cent are the acidophil or eosinophil type, and the remaining 15 per cent constitute the basophil tumors. It is disturbing in the face of the clinical manifestations that this patient had that there are so few acidophilic granules in so few of these cells. In the normal pituitary it is quite true that from area to area and field to field the percentage of chromophobe and chromophil cells varies. According to Bailey[4] the higher the percentage of acidophilic cells, the more striking the signs and clinical findings of acromegaly. There is no denying that the patient presented today has acromegaly, but the histological appearance of the tumor *(Figure 4)* is certainly not the one that we frequently think is associated with acromegaly.

Dr. Boley: How is this patient to be followed after operation?

Dr. Williamson: After surgery she had diabetes insipidus for two days, but this cleared, and now she is not drinking much water. She is still taking dilantin.

Now we wonder if we should irradiate the remaining bits of tumor. Before we consider this, though, I want to find out if the pituitary gland will recover from the surgical insult and from the compression by the tumor. After her six weeks' checkup we will consult Dr. Tice. It is my personal feeling

that she should receive some irradiation to keep the remaining bits of tumor from recurring. We know that the pituitary gland tolerates irradiation therapy well. With radical surgery followed by irradiation in this case we may have a pituitary that begins to function again. Many is the chromophobe and eosinophil adenoma of the pituitary gland that will be asymptomatic for as long as 20, 30 or 40 years after surgery plus irradiation therapy. This patient should have an excellent life expectancy, and her vision should return to a reasonably normal state. Immediately after operation of course there was some constriction of her visual fields, but she is gaining some of her temporal vision back now. Her visual acuity now is 20/20 in both eyes—the same as it was before operation. The amount of hormonal therapy that she will require will have to be determined later. At the present time she is receiving no endocrine medications in order to allow her pituitary to begin functioning if it will.

Dr. Boley: Will her menstrual periods return?

Dr. Williamson: If the pituitary starts functioning she may begin menstruating in six to eight weeks. However, the nubbin that we left may represent only her posterior lobe, in which case there will be no pituitary function and she will not menstruate. I have never been fortunate enough to be able to separate a pituitary gland from tumor like this before, and I have high hopes that in this case she may regain normal pituitary function.

Dr. Boley: Dr. Tice, do you have any comments?

Dr. Tice: As Dr. Williamson said, pituitary tumors are radiosensitive. This includes both the eosinophil adenoma and the chromophobe adenoma. Most of the tumors encountered are of the chromophobe type. Surgical exploration is usually performed initially because one can make a mistake in the diagnosis of a "scooped out sella." They are not all due to adenomas, and, of course, it is valueless to irradiate something that is not going to respond to irradiation. I have treated a few patients with acromegaly. The acromegaly has not reversed over the years with irradiation therapy. The patient gets along well, although he retains the features of acromegaly. I agree with the plan that Dr. Williamson presented. If the tumor has not all been removed, the patient should have irradiation later on.

Dr. Helwig: What type of irradiation would she receive?

Dr. Tice: I use radioactive cobalt. Up until 1958 we used x-rays.

Medical Student: Dr. Williamson, you said that acromegaly is reversible. Does this include the bone changes in the hands, feet, jaw and the brows?

Dr. Williamson: Bronson Ray, who is now doing total hypophysectomies for advanced acromegaly, claims that the feet and hands are shrinking and the jaw is receding in his successful cases. Dr. Ray is the world's authority on the hypophysectomy, and he is using this procedure on all his cases of acromegaly.

Dr. Boley: The histology of this tumor which bothered Dr. Helwig also bothered the pathologists at the Kansas Medical Center. We were happy to find a few cells with the orange color, but I could not by any stretch of the imagination make myself say that this was an eosinophil adenoma even though clinically it should be. Possibly that portion went down the drain, since the tissue that Dr. Steegmann received was also that of a chromophobe ademoma. I might say that we sent sections of this tumor to Dr. Sheehan in Liverpool, England, and he also submitted a diagnosis of chromophobe adenoma.

In a recent series of 105 cases of verified pituitary adenoma[1] there were at least three cases of acromegaly in which no acidophils could be found despite good biopsy specimens, the diagnosis of solid chromophobe adenoma being the only one possible. Dr. Dorothy Russell[5] states that in practice, acromegaly is not invariably associated with unequivocable acidophil adenoma of the pituitary. On the contrary, the cells of the adenomas may bear a greater resemblance to the chromophobe type. This is not necessarily attributable to exhaustion supervening upon a previous acidophilic stage. The answer to the problem awaits solution, and this case seems to be an example of what she is talking about.

In summary, this is a classic case of acromegaly in a young girl who had a good response to hypophysectomy. The pituitary tumor was removed while leaving the compressed, non-neoplastic portion of the pituitary gland intact. The histologic finding of a chromophobe adenoma of the pituitary in this case was unusual and certainly unexpected in view of the definite clinical findings of acromegaly. It is expected in this case that the acromegalic features, the visual changes and the endocrine changes will regress in part, or else be easily controlled by her therapeutic regimen.

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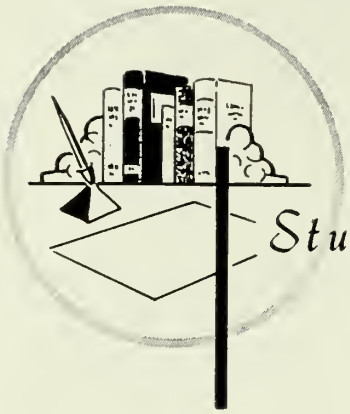

Student
THESIS

The Abnormal Hemoglobins and Associated Diseases

L. H. BATES, M.D., ***Akron***

LITTLE INFORMATION WAS KNOWN concerning the abnormal hemoglobins until the year 1949. In that year, Pauling and his workers reported that the hemoglobin from a patient with sickle cell anemia migrated at a different rate than normal hemoglobin in an electrophoretic field. This hemoglobin was designated as S hemoglobin and normal hemoglobin as A. Other hemoglobins have been designated as C, D, E, F, G, H, I, J, K, L, M, N, O, and P. B was not included in the nomenclature because it was used by some investigators to refer to the hemoglobin of sickle cell anemia.

There are two hemoglobins which are considered normal in the human, A which is the adult type and F which is the fetal type and is normal in the newborn and for about 12 weeks of life. Beyond this age, F hemoglobin in amounts greater than three per cent are considered abnormal and probably indicate some anemic process which is putting a heavy demand on the hemopoetic system.

Genes Determined

The type of hemoglobin which an individual manufactures and which circulates in his blood vessels is genetically determined. The genes which determine the type of hemoglobin an individual will possess are with one exception inherited as dominant genes. This means that whenever a gene is present for any type of hemoglobin, that type of hemoglobin will be found in the individual. For example, a person who has an AS genotype will produce both A and S hemoglobins. Hemoglobin genes for types A, S, C, D, and E are fairly well established as being allelomorphic, that is on the same location on the chromosome so that no more than two of these hemoglobins can be made by one person. The ability to produce hemoglobin F seems to be present in all individuals regardless of the adult type of hemoglobin which they will produce. The production of F hemoglobin is suppressed by either the presence of hemoglobin A or by the gene for hemoglobin A. The evidence seems to indicate that it is the actual presence of the A hemoglobin itself which suppresses the hemoglobin F production. In thalassemia, a disease in which the gene is present for A hemoglobin but its formation is depressed by the thalassemia gene, hemoglobin F is present in relatively large amounts. Other adult hemoglobin types also suppress the formation of F hemoglobin but not to the extent that hemoglobin A does.

Halbrecht and Klibanski in 1957 reported a new type of fetal hemoglobin which they thought was normal but of an earlier period of development. It was found in a fetus of 20 weeks of age. Kunzer later did some work on this hemoglobin which he consistently found in the fetuses from seven to 14 weeks of age. He postulated that the three types of normal hemoglobin, the primitive (P), the fetal (F), and the adult (A) represent the three phases of hemato-

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This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be best by the faculty at the school. Dr. Bates is now at the Akron General Hospital in Akron, Ohio.

poietic activity, the mesoblastic, the hepatic and the medullary. Furthur evidence in this direction has been reported by two authors who studied the distribution of F hemoglobin among cells. Bromberg found different amounts of F hemoglobin in the top and bottom layers of centrifuged samples of blood from 29 newborns. The difference between the upper and lower layers increases inversely with the lowering of the total F percentage. The percentage of F hemoglobin at the bottom of the centrifuged sample was found to be greater than that at the top, indicating that the cells containing F hemoglobin were generally heavier than those not containing F hemoglobin. Allison agitated red blood cells with glass beads to mechanically rupture them, filtered the remaining cells and lysed them with hypotonic saline. He then determined the amount of F hemoglobin in each of the two fractions. The cells which were osmotically lysed were found to contain a higher percentage of F hemoglobin, again indicating that the F hemoglobin is distributed only in some of the cells and not in others. All of the other hemoglobins are thought to be equally distributed in all red cells.

Hemoglobin F

Hemoglobin F is reported to occur in varying amounts in many abnormal conditions of the blood including Sickle Cell Hemoglobin C disease, Hemoglobin H disease, thalassemia, Hemoglobin D thalassemia, Hemoglobin E thalassemia, and others. Huisman made and reported a study on normal levels of F hemoglobin at different ages in children. He found that in the newborn, about 80 per cent of the hemoglobin is F type and 20 per cent is type A. By the age of four months, F dropped to a level of .3 per cent to .4 per cent or lower.

Smith suspecting that hemoglobin F might remain elevated in the presence of nonspecific diseases ran and reported the F hemoglobin values on 18 individuals suffering from such diseases as malnutrition, prematurity, upper respiratory infection, chronic diarrhea, and viral hepatitis. The ages varied from four to 28 weeks and all of the values found were considered to be within normal limits for their ages, indicating that non-specific disease has very little if any influence on the fetal hemoglobin level.

All of the other hemoglobins are considered abnormal when found in any proportion. The most common abnormal hemoglobin is S which has an incidence of from ten to 39 per cent in some parts of Africa to none in other parts of Africa. The gene for the abnormal hemoglobin S is associated with varying symptoms depending on the gene with which it is coupled. When one S gene and a normal gene are present together, the condition is called Sickle cell trait and is characterized by no symptoms under normal conditions. When an individual with this genetic make up is exposed to decreased oxygen tension, such as when flying or traveling at high altitudes, their red blood cells are liable to "sickle." This means that the hemoglobin in the cells crystallizes, causing the cell to form into a sickle shape. The cells cling together within the vessels to cause embolization and infarction of organs, especially the spleen which gives the symptom of sudden onset of abdominal pain. When the S gene is present in the homozygous condition, that is combined with another S gene, the disease is called Sickle Cell Anemia and is characterized by numerous sickling crises which also cause sudden onset of abdominal pain due to splenic infarction. During these attacks the hemoglobin in the peripheral blood may drop as low as three or four grams per 100 cc and a smear of the blood at this time will show a high percentage of sickled cells. These crises are brought on by such minor conditions as fatigue, coryza or upper respiratory infections and often no causative factor can be found to be responsible for the crisis.

During and after the crises, infarction of the bone marrow may occur due to clogging of the nutrient blood vessels. Embolization of the fat and marrow follows infarction and results in fat globules being found in the saliva and urine as reported by Shelley in individuals with sickle cell anemia and sickle cell hemoglobin C disease. In the three cases presented by Shelley the most common symptoms of bone marrow infarction are bone pain, lethargy and fever.

Osteomyelitis Effects

Silver reported two cases of Salmonella osteomyelitis in individuals with abnormal hemoglobins, one with sickle cell thalassemia with 50 per cent sickle cells and one CD disease with 10 per cent target cells. He reviewed the literature and found 24 cases of Salmonella osteomyelitis reported in negro children and young adults who had sickle cell diseases. He suggests the reason for the commonness of the condition is that since the area is infarcted, the blood supply is reduced and neither the phagocytes or administered antibiotic drugs are able to come into contact with the bacteria which thrive on the infarcted bone marrow.

The S hemoglobin, with rare exceptions which are not well established, is confined to the negroid race or individuals of negroid ancestory. The S gene may be combined with any of the other genes which are allelic with it so that the conditions of Sickle cell Hemoglobin C disease (SC) reported by Newhall and Raymond, Sickle cell Hemoglobin D disease (SD) reported by Cheroff and Sickle cell Hemoglobin E disease (SE) reported by Aksoy and Leh-

mann can and do exist. The S gene may also be in combination with any of its alleles in the presence of the gene for thalassemia which would result in such conditions as Sickle cell thalassemia or Sickle cell Hemoglobin C thalassemia.

S Hemoglobin

Studies have been made on the incidence of S hemoglobin by itself and with other genes. Smith and Conley reported the following table from a study of the blood of 1000 patients.

Race	*No.*	*SS*		*AS*		*SC*		*AC*		*CC*	
		No.	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
White	500	0	0	0	0	0	0	0	0	0	0
Negro	500	5	1	36	7.2	1	.2	9	1.8	0	0

In a study by Schneider on 1550 negro patients admitted to a hospital for all reasons, the following percentages were obtained.

Hemoglobin type	*Number of cases*	*Percentage*
AS	139	9.0
AC	35	2.3
SS	4	0.3
SC	1	0
SF (thalassemia)	2	0.1

The sickling phenomenon is characteristic only of the S type of hemoglobin and has been studied quite extensively by Allison. He found that when cells sickle they lose potassium, gain sodium, and are able to synthesize less ATP than normal cells. Often when the cells sickle they clump together and cause vascular obstruction. A sickled cell will revert to a normally shaped cell if the oxygen tension in it is raised, but even if the cells reach the pulmonary vascular bed, the 15 seconds which it takes it to pass through is not sufficient to oxygenate them back to normal. The S type hemoglobin is apparently distributed throughout all of the red cells of an individual who has any hemoglobin S as any of the cells will sickle if exposed to a low enough oxygen tension. Allison also studied three factors in the sickling process, temperature, oxygen tension, and time.

DeTorregross reported one case of an individual who had both Sickle Cell trait (AS) and congenital spherocytosis. The individual was treated by splenectomy to which his spherocytosis responded quite well.

Hemoglobin C

The next most common abnormal hemoglobin is hemoglobin C. It is also exclusively found in the negro race and its incidence has been found to vary between 0 and 21 per cent by Neel in a study of the disease in African negroes. The gene for Hemoglobin C is an allele of A and S and occurs with both as well as with itself. When it occurs with itself, the condition is called Hemoglobin C disease and is characterized by increased fragility of the red blood cells, anemia, splenomegaly, and hematuria. When the C gene is combined with the A gene, the condition is called Hemoglobin C trait and is asymptomatic. The C gene combined with the S gene gives Sickle cell hemoglobin C disease and usually has the same symptoms as Sickle Cell Anemia. Hannon has reported vitreous hemorrhages in individuals with Sickle cell hemoglobin C disease (SC). The Frequency of the gene has already been given in the table of Schneider discussed with S hemoglobin.

Hemoglobin was found in individuals with thalassemia by Erlandson which turned out to be hemoglobin C in individuals in Italy. The individuals who were siblings were not negroes but negro ancestory could not be ruled out of their background.

Kraus and Diggs found that the C hemoglobin forms rhomboid crystals when it is allowed to dry slowly in cases of Hemoglobin C disease (CC), Sickle cell hemoglobin C disease (SC), and Thalassemia hemoglobin C disease but not in the hemoglobin C trait (AC). The same phenomenon was noticed in individuals with Hemoglobin C disease (CC) by Wheby. He also made the observation that the crystal formation did not occur in the individuals after they had a splenectomy performed whereas it did before the splenectomy.

D Hemoglobin

Hemoglobin D was not reported for some time after hemoglobin C, perhaps because the nature of it was not certain for a time after its discovery. The electrophoretic motility of D is identical with that of hemoglobin S and the two cannot be differentiated by electrophoresis. When hemoglobin of the motility of D is found it can only be differentiated from S hemoglobin by solubility determination or by running a sickling test on the cells in question.

Unlike S and C hemoglobins, D is not limited to the negro race but has been found in the negro. Chernoff has found the incidence of the D gene in the American negro to be .4 per cent and has reported cases of Hemoglobin D disease (DD), hemoglobin D trait (AD), Sickle cell hemoglobin D disease (SD) and possible Hemoglobin D thalassemia.

Chernoff suggested in 1955 that the D gene is allelic to A and S and is inherited as they are but Neel in 1957 suggested that there is no evidence that D is inherited as an allele of A and thought that it might be an allele of E, H, I, or M. He also suggested that it might be on a locus independent of any of these other hemoglobin genes.

Raper reported four cases of hemoglobin D in a study of 400 Gujerati Indians and Hynes reported a case of hemoglobin D in a Persian as well as the first case of proven Thalassemia hemoglobin D disease. It is difficult to distinguish homozygous hemoglobin D disease from thalassemia hemoglobin D disease because A hemoglobin does not show on the electrophoresis in either situation. In homozygous hemoglobin D disease, it is not produced because of the lack of a gene for its production while in thalassemia hemoglobin D disease the gene for A hemoglobin is present but its expression is suppressed by the thalassemia gene. The definitive diagnosis of thalassemia hemoglobin D disease is possible only if thalassemia is found in the family in such a way as to indicate that the person in question could have inherited it from his parent.

Hemoglobin D in the homozygous seems to be more benign than C or E as indicated by the number of target cells which are found in each condition.

Hemoglobin E

Hemoglobin E is generally limited to Southeast Asia. Jonxis has suggested that A_2 hemoglobin is the same as E hemoglobin and is nonspecifically present in many chronic diseases. Hemoglobin E can occur by itself in the homozygous condition or in combination with the S or normal A gene. Na-Nakorn in a study of E hemoglobin reported Hemoglobin E disease (EE), Hemoglobin E trait (AE) and Hemoglobin E thalassemia. In hemoglobin E disease (EE), a microcytic normochromic anemia is present with 25-60 per cent target cells being present. Na-Nakorn also reported that individuals with hemoglobin E thalassemia have splenomegaly while those with Hemoglobin E disease do not. Sickle cell hemoglobin E disease was found in an Eti-Turk from Turkey by Aksoy and Lehman giving more evidence that the gene is inherited as an allele of A, S, and C. In that case, the electrophoresis of the blood showed a composition of 40 per cent E hemoglobin and 60 per cent S hemoglobin. The patient was a female and her son also had ES phenotype and genotype which would at first lead one to assume that the two genes were on different loci. However studies indicated that the father, who was not available for study, had the S hemoglobin gene which then would allow the explanation of one locus to be more likely.

Punt reported two cases of thalassemia E disease in Indo-Europeans in which electrophoresis revealed small amounts of A hemoglobin and large amounts of E and F hemoglobin. Lehmann found 10 hemoglobin E traits (AE) and two hemoglobin E diseases (EE) in a study of 80 Burmese and from his studies concluded that Hemoglobin E disease is milder than Hemoglobin C disease.

Na-Nakorn in a study of Hemoglobin E found that in 36 cases of Hemoglobin E trait no symptoms were present. He also found in 32 cases of Hemoglobin E thalassemia that all individuals had symptoms during the first decade of life which included shortness of breath, palpitations, dyspnea on exertion, frequent upper respiratory infections, fever, intermittent jaundice, a large abdomen, poor appetite, poor physical and mental development, and light beards in the males. In these cases, electrophoresis showed the percentage of F hemoglobin to vary from 5.5 to 85.4 and all but three of these were between 15 and 40 per cent.

In individuals with hemoglobin E disease (EE), the following symptoms were noticed: Tiredness, easy fatigability, and mild arthralgia. In all of the cases, a microcytic normochromic anemia was present. Electrophoresis of the hemoglobin showed only E hemoglobin but alkali resistance studies up to 6.4 per cent F hemoglobin indicating that while E is an inhibitor of F hemoglobin, it is less of an inhibitor than is A hemoglobin. In comparison with hemoglobin C disease, hemoglobin E disease results in the production of less target cells and should be considered as a diagnostic possibility in a mild microcytic normochromic anemia which does not respond to iron therapy.

In the same study Na-Nakorn determined the incidence of E hemoglobin gene in Thai people. Some of the Thai are natives of that country and others are pure Chinese stock with many a mixture between these two extremes. 1006 individuals were studied and an over all incidence of 13.6 per cent was found. Of the 137 cases of hemoglobin E found, 134 were Hemoglobin E trait (AE) with the percentage of A hemoglobin being greater than that of E hemoglobin, while the three had all E hemoglobin by electrophoresis. The following information was found in relation to the ancestoral background and incidence of E hemoglobin.

Pure Thai	17.4%
½ to ⅞ Thai	11.0%
⅛ to ⅜ Thai	3.9%
Pure Chinese	0.0%

Hemoglobin G

Hemoglobin G was first reported by Edington and Lehmann in 1954 and since then has been found in combination with A and G hemoglobins and with

thalassemia. Schwartz pointed out that G is not inherited as an allele of A, S, or C hemoglobins or of thalassemia. He established this fact by finding cases in which the offspring inherited both G and S from one parent in one instance and G and Thalassemia from one parent in another instance. The G hemoglobin seems to have no detrimental effect on humans as Sickle cell hemoglobin G disease (GS) is symptomatically indistinguishable from Sickle cell trait (AS) and Hemoglobin G disease (GG) as well as Hemoglobin G trait (AG) are indistinguishable from the normal (AA) except by electrophoresis. Actually, an individual who has Hemoglobin G thalassemia fares much better than an individual who has thalassemia minor because the production of G hemoglobin is not suppressed by the thalassemia gene as much as is normal A hemoglobin.

The distribution of the G gene is not known as there are too few cases reported to make a study of this aspect of the disease. The abnormal hemoglobin was first found on the Gold Coast of Africa and has since been reported in the U.S.A. J. V. Neel believes that the gene for G hemoglobin is inherited from a locus different from A, S, and C.

H Hemoglobin

Hemoglobin H was reported first by Rigas in Chinese in 1955 and its distribution according to Chernoff is limited to the Chinese. Since his report, Hemoglobin H has been found by Allison in individuals from Greece and Turkey and by Brain in Naples. Wolf postulated that the hemoglobin H gene is increased in penetrance in the presence of the thalassemia gene as evidenced by one family history which was found in which neither parent had H hemoglobin by electrophoresis, but one had thalassemia minor and the offspring had Hemoglobin H thalassemia. Lie-Injo Luan Eng later presented five cases of Hemoglobin H in the absence of thalassemia in which the parents had no H hemoglobin by electrophoresis. He suggested that the hemoglobin H gene is inherited as a simple recessive and is expressed only in the homozygous state or in the presence of the thalassemia gene which apparently does enhance its penetrance.

Hemoglobin H is quite unstable and when allowed to stand disintegrates. As hemoglobin G, hemoglobin H is thought to have arisen as the result of a mutation and is kept low by selection against it.

Hemoglobin I was first reported by Page in a few individuals in the U. S. A. Not much is known about hemoglobin I except that it is not confined to the negro race and is quite rare. It has not been established as being inherited in the same or different locus than the A, S, C locus since it has not been found occurring with these genes.

Hemoglobin J was discovered and reported in 1955 by Thorup in an American family. It was also found in a white person of French-Canadian ancestory and in an Indonesian. It has been suggested that J is identical with Liberian I hemoglobin which is discussed farther on in this paper. Too few cases are available to make a distributional study. Raper reported hemoglobin J in Gujerati Indians. McCabe has estimated that in the Hemoglobin J trait (AJ), more than one half of the hemoglobin is the J type.

Hemoglobin K was first reported as I, redesignated as J and then finally as K. It was first reported by Cabannes in India in 1956. It has been suggested that Liberian II and K are the same hemoglobin. Ager and Lehmann reported this hemoglobin in an East Indian family and in a London resident of South African ancestory.

Hemoglobin L

Hemoglobin L was discovered in a family of Hindu ancestory by Ager and Lehmann in 1957. Little has been reported in the literature concerning this abnormal hemoglobin.

Hemoglobin M was discovered in individuals of German ancestory and differs from the other hemoglobins in that it has a different spectrophotometric absorption band. It was actually discovered in Germany but since has been found in individuals of German descent in the United States. Attempts to separate the M hemoglobin from A hemoglobin by paper electrophoresis have been unsuccessful. Recently Gerald has been able to separate M hemoglobin from A hemoglobin electrophoretically by the use of starch block electrophoresis. He found that Hemoglobin M moves slightly slower than A and in the cases which he studied M composed about 30 per cent of the total hemoglobin of the individual, the remaining portion being made up entirely of A hemoglobin.

In 1956, Robinson reported two new hemoglobins from Liberia which he designated as Liberian I and Liberian II until they could be further studied and assigned a letter. Since that time, further studies have been carried out and as previously suspected, Liberian II was found to be identical with Hemoglobin K. Liberian I was found to be identical with no previously described hemoglobin and was assigned the letter N to designate it.

Hemoglobin O (Buginese X) was reported in June 1958 by Lie-Injo Luan Eng to occur in the Buginese of Sulawesi. It was previously reported in an Indonesian journal but attracted almost no attention because of the language and journal in which it was reported. Since that time it has been studied and some of its properties determined. Thus far, hemoglobin O has been found only in individuals

from the Indonesian island of Sulawesi and the incidence of the various parts of the island is given below:

6 Hemoglobin O carriers of 455 Buginese in Sulawesi.
3 Hemoglobin O carriers of 136 Makassars of South Sulawesi.
1 Hemoglobin O carrier of 107 Goroutatos of North Sulawesi.
1 Hemoglobin O carrier of 77 Toradjas who originated in Central Sulawesi but live in Makassar.

No family studies have been made on individuals with hemoglobin O. The only abnormal finding in the studies made on the homoglobin was an increased resistance of the cells to lysis by hypotonic saline.

New Discoveries

Three new hemoglobins have been discovered and reported by name only. This is a temporary name and will be dropped when the hemoglobins have been studied more extensively and agreement is reached as to the letter which should be used to designate them. This method of naming the new hemoglobins avoids much repetition and confusion in nomenclature.

One of the new hemoglobins is known as "Bart's" Hemoglobin and was reported by Ager and Lehmann in August 1958. It was found in an infant four weeks of age whose parents both had normal hemoglobin and is to date the most rapidly moving hemoglobin which has been found. It is thought to be an abnormal fetal hemoglobin. Electrophoretic studies showed the following composition:

A hemoglobin	40%
F hemoglobin	36%
Bart's hemoglobin	24%

Studies on this hemoglobin have revealed that it is about one half alkali resistant.

Another recent hemoglobin is "Norfolk" hemoglobin which was reported in August 1958 by Ager and Lehmann. This hemoglobin was found in individuals of Norfolk family stock and are purely English. The father and younger brother of the patient in whom the new hemoglobin was found were also found to be carriers of the new hemoglobin. In all of the cases studied, a normal blood picture was found except for electrophoresis. On paper electrophoresis, hemoglobin Norfolk is very close to and yet distinguishable from Hemoglobin J.

The most recent hemoglobin reported is one known as Hemoglobin "Lepore" which was reported by Gerald and Diamond in September, 1958. The discovery was found by starch block electrophoresis and was associated with an increased level of A_2 Hemoglobin.

Thalassemia is considered in this discussion of abnormal hemoglobins because it causes the expression of some of the abnormal hemoglobins and prevents the expression of normal A hemoglobin. Thalassemia, which is also known as Cooley's anemia and Mediterranean anemia is a disease in which the production of normal hemoglobin is suppressed resulting in a mild or severe anemia. It is controlled by a different set of genes than those which directly control the type of hemoglobin produced in an individual and it has been suggested that there are actually several thalassemias. Thalassemia can be present in a homozygous or heterozygous condition. Heterozygous disease is known as thalassemia minor and is manifest by a mild anemia and the presence of target cells. Homozygous disease is known as thalassemia major and is characterized by a severe anemia, splenomegaly and usually results in death in the first decade of life. The only treatment for thalassemia is blood transfusion to relieve the anemia and splenectomy. The splenectomy is performed not to relieve the anemia as in congenital hemolytic anemia, but to relieve a greatly distended abdomen. Often the spleen is enlarged to the pelvic brim.

Thalassemia causes the presence of F and A_2 hemoglobins as a compensatory reaction to partially replace the normal A hemoglobin whose production is suppressed. Thalassemia apparently causes the expression of H hemoglobin by increasing the penetrance of the gene responsible for hemoglobin H production making it dominant whereas normally it would be recessive.

Since thalassemia is a hereditary disease, a family history of anemia is important in establishing the diagnosis. If unrecognized, thalassemia will obscure the diagnosis of an abnormal hemoglobin trait and will make it appear as an abnormal hemoglobin disease because hemoglobin A does not appear on electrophoretic study. Usually F hemoglobin is present in the electrophoretic study as a clue that thalassemia is present. Thalassemia has been found with the following genotypes: AA, AS, SC, AE, AD, AC, and AH.

Abnormal hemoglobin studies in the human has stimulated studies of the hemoglobins of other animals in which the genetic aspects of the disease can be more easily studied by selective breeding. The hemoglobins of many animals have been studied including the following: Horses, snakes, turtles, crocodiles, lizards, frogs, sheep, pigeons, ducks, guinea fowl, chickens, parakeets, koel, cows, goats, rabbits, dogs, alligators, and cattle breeds of Great Britain.

Some interesting results were found in the animal

hemoglobin studies. All of them seem to be inherited by simple mendelian mechanisms. Bangham in his studies of cattle found that there is a close connection between the hemoglobin type and the level of the butter fat in the milk of the cattle indicating that the two genes which control these two traits are quite close to each other or at least on the same chromosome.

The avian studies revealed an avian hemoglobin faster than normal which had almost the same motility as some of the human and mammalian hemoglobins indicating a possible common ancestory. Sheep have been found to have at least two different hemoglobins as well as a fetal type. In general amphibian hemoglobins are slower than that of lizards and crocodiles. Turtles have two hemoglobins normally present, one about the speed of human S hemoglobin and one twice as fast. In horses, at least three hemoglobin types are present but have been shown not to be alleles.

Several methods of analysis of the hemoglobins have been developed and used. Paper electrophoresis is the most popular and simplest method of analysis and according to Itano it has accelerated research in this field more than any other one factor. The method of Chernoff consists of placing a sample of the hemoglobin from lysed cells to be tested on a strip of filter paper which is saturated with a buffered solution of known pH in an electrophoretic field. The hemoglobin then migrates toward the anode or cathode depending on the pH of the buffer solution and the isoelectric point of the hemoglobin. The migration is dependent on the nature of the globin and is not effected by the state of oxidation of the iron of the molecule so that oxy- and carbon monoxy-hemoglobin migrate at the same speed. Following is a diagram of the motility of some of the hemoglobins as given by Lehmann.

The main drawback to the method of determining hemoglobins before 1957 was that in order to determine a hemoglobin type one would have to first run it with normal hemoglobin and if it was found to be abnormal, a repeat run was necessary simultaneously with each hemoglobin which it resembled in order to distinguish it from each one. This made the identification of abnormal hemoglobins time consuming and laborious. In 1957, Wael and Punt determined the absolute motilities of three hemoglobins and suggested that all hemoglobins could be expressed in terms of their absolute motility. The motility is expressed in centimeters squared per voltage per second x 10^{-5}. The following motilities were found and reported:

Hemoglobin A .. 3.12 cm^2 $volts^{-1}$ $seconds^{-1}$ x 10^{-5}
Hemoglobin F .. 3.87 cm^2 $volts^{-1}$ $seconds^{-1}$ x 10^{-5}
Hemoglobin C .. 2.20 cm^2 $volts^{-1}$ $seconds^{-1}$ x 10^{-5}

Using this method, any voltage or time can be used and the motility determined and compared with results obtained by other investigators who may have used a different voltage or time in their determinations. Roonan and Ebaugh have run and reported the motilities of several abnormal hemoglobins relative to that of normal A hemoglobin.

Huisman and Prins reported another method of hemoglobin determination and separation which consisted of the chromatographic separation in a column of Amberlite 150 resin. The method was compared with paper electrophoresis in the article and the only significant difference was that Hemoglobins E and J separated better on paper while the column separated F and H better.

Kunkel and Wallenius reported using moist starch slabs to support the hemoglobin in an electrophoretic field for separation. Robinson reported good results using a buffered agar gel for supporting the hemoglobin.

Other methods of analysis which distinguish one hemoglobin from another include solubility determination for any hemoglobin, sickling to determine S hemoglobin, alkali resistance to determine F hemoglobin and spectrophotometric methods to determine Hemoglobin M. Electrophoresis on a starch gel has also been used.

Studies on the amino acid composition of several hemoglobins have been carried out and an excellent report on this subject is given by Huisman. Murayama has studied and reported the conformation differences in the sulphydryl groups in some of the hemoglobins. Huisman in attempting to determine the basic difference in the abnormal hemoglobins made a study of the N-terminal residues of human hemoglobins and concluded that the results which he obtained could be explained on the basis of changes in the structure of the polypeptide chains of the protein.

In addition to the salmonella osteomyelitis previously mentioned, there are two fairly common diseases associated with the abnormal hemoglobins. These are cholelithiasis and gout. Both of these diseases are thought to be due to an excess breakdown

(Continued on page 456)

The President's Message

Having just returned from the A.M.A. meeting in Miami, I feel some report should be made of the activities at this meeting.

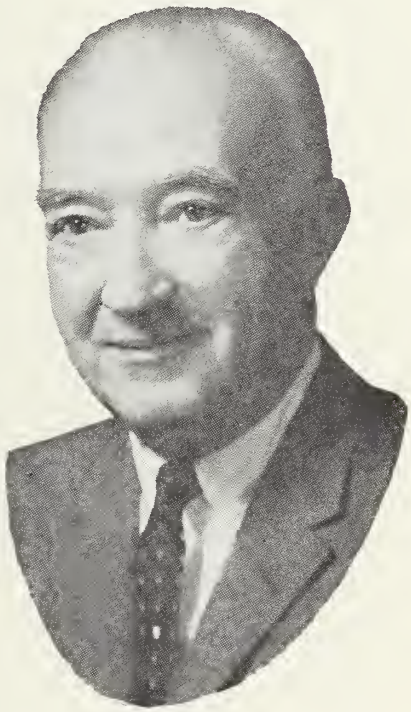
Kansas was represented by our outstanding delegates, Drs. Lucien Pyle and George Gsell. The alternate delegates were Drs. Norton Francis, Wichita; Clair O'Donnell, Ellsworth; and myself, of Sabetha. Wives present were Mrs. L. R. Pyle, Mrs. C. O'Donnell and Mrs. F. E. Wrightman, all of whom were delegates assisting Mrs. Chester Young, president of the Woman's Auxiliary, and Mrs. W. T. Braun, president-elect of the auxiliary.

On Sunday afternoon the speech given by Mr. Paul Butler was resented by the entire audience, regardless of political affiliation, because of the vicious attack on the medical profession.

Attending the Reference Committees of the House of Delegates is an experience everyone should have, for it makes one realize that the A.M.A. is a Democratic organization—the purpose of which is to help solve the many problems of the Medical Profession on a national basis.

On Monday morning we were privileged to hear Mr. Lock, an executive of Continental Oil Company. His talk was serious and made us all conscious of the fact that everyone, whether Democrat or Republican, should first be for the individual upholding American principals of free enterprise and the intent of the Constitution of the United States.

Then came the proud moment when the Kansas Medical Society received an Award of Merit from the American Medical Education Foundation for the outstanding contribution to the preservation and continuance of the high standards of medical education in the United States of America. We owe this distinction to the untiring efforts of Dr. C. V. Black and the outstanding co-operation of the Auxiliary. We owe to them an everlasting debt of gratitude and to those who contributed to A.M.E.F.



Cordially Yours,

President

Political Responsibility

When this is read, the primary elections will be past and the serious business of choosing an individual for an office will be at hand. Careful scrutiny of party platforms and of individual policy declarations by candidates themselves will become important. The medical profession with its specific responsibility for health care will have not only a particular interest but an exceptional public obligation toward the outcome of the November election.

Because there exists certain legal restrictions governing political activities, it appears a few might be mentioned at this time while interest in this subject is greater than normal. For example, an individual citizen is permitted some activities denied to organizations. The following is summarized from a memorandum issued by the Law Division of the American Medical Association on this subject.

A medical society might properly engage in:

1. The preparation and publication of information, whether critical, favorable or factual only, describing the position or attitude taken by political parties or candidates on any issue in which the association or its members has an interest.
2. The preparation and distribution to its members of the voting records of members of Congress.
3. The preparation and dissemination of information and advice on how physicians can or should organize for political action.
4. The distribution of information giving pertinent data regarding the position of particular parties or candidates, where they derive support, etc.
5. Urging its members to evaluate the background, viewpoint, competence, etcs., of candidates or political parties.
6. Sponsoring or encouraging members to organize local "get-out-the-vote" drives, including campaigns to get voters to register, arrangements for transportation of voters to polling places and the urging of physicians generally to participate in and assist such local "get-out-the-vote" drives.
7. Promoting organization of local committees of doctors to become more interested and active in local, state and national government, and in politics generally. However, if such committees become active in the support of particular candidates or parties, a medical association legally could not use its funds or staff in support of such efforts. While active assistance in organizing such committees would be permitted, an association could not use such committees as vehicles for contributing support to candidates or parties.

A medical society may not use its funds to contribute to any candidate or party either directly or indirectly, nor may it prepare campaign literature in behalf of a candidate or a party, nor furnish advertising space, radio or T.V. time for the purpose of giving active support or oposition to particular candidates or parties. The medical society could legally encourage its members to participate actively in politics or elections but this must be differentiated from recruiting help for political committees, candidates or parties.

An individual member of the medical profession may freely and extensively engage in political activities, may contribute and expend funds, make political speeches, distribute pamphlets and engage in electioning for or against any particular candidate unless these activities are specifically restricted by law. He may contribute not more than $5,000 in any one year to a candidate or to a political party.

The Kansas Medical Society is much concerned over the necessity of providing the public with sound legislation in the field of health. These broad principles are familiar to every member. The election of persons with views toward health care that coincide with the opinion of the medical profession becomes the responsibility of the physician himself and his individual effort.

Malpractice Definition

The Kansas Medical Society requests assistance from its members upon the question of whether it is possible to legally define areas of malpractice lia-

bility. The question is whether a law can be passed that will fully protect the rights of the individual patient but can provide a safeguard to the physician against the many unwarranted lawsuits that increasingly find their way into the courts.

The Executive Committee of the Society under the direction of F. E. Wrightman, M.D., president, appointed a committee of 14 members on a basis of age, geographical location and specialty interest. They will meet between now and January, as long as their work holds hope for success, in an effort to prepare a set of principles upon which a malpractice law can be based. The committee and the Society will appreciate any suggestions members have concerning ways in which such a law might be prepared and, most especially, will suggestions for the inclusion of specific items be appreciated. These may be sent to the Executive office, 315 West Fourth Street, Topeka, Kansas.

In its broadest terms, the law governing malpractice implies a physician is expected to possess the skill and to exercise the care commonly possessed and exercised by other reputable physicians in the locality. If he holds himself out as a specialist, he must meet the standards of practice of a specialist in his designated field of practice.

The courts have continuously broadened the obligations of physicians to a point where the end result, rather than the procedure, is becoming a factor and most recently it appears the patient's full knowledge of each procedure employed is to be a criterion.

At one time the courts ruled medicine was a technical science not understood by the layman. Expert testimony was needed to establish whether an acceptable standard of practice had been employed. Later the doctrine *Res Ipsa Loquitur* (which means "the thing speaks for itself"), was occasionally admitted in malpractice cases and the result became an integral factor in malpractice actions.

More recently the courts held that a person's body is his individual possession. He may permit or refuse to permit a physician to treat him but, unless he is fully informed of the dangers involved in a required treatment, he is unable to give an informed consent. The element of assault or breach of contract then becomes a factor.

It may be entirely impossible to define areas of malpractice which can defend the ethical physician who used proper judgement and exercised proper skill without restricting the personal liberty of his patient. This committee will study that problem in the hope that something can be accomplished which will benefit the medical profession and at the same time protect the patient but eliminate the hazard of unwarranted court procedures. If this is to be accomplished, the individual suggestions and advice of individual members will be essential.

Power of Language

In June 1957 the House of Delegates of the American Medical Association adopted a new Principles of Medical Ethics. These consist of a preamble and ten sections. They replace what had grown to be a preamble and 47 sections. In substance, everything from the previous model has been retained.

Unnecessary words have been deleted. A more modern effect has been achieved. All elements of the classic ethics are embodied in the new document. The change, however, has been accomplished at a sacrifice of some eloquence of expression. One such example is here selected primarily for the purpose of preserving a dignified and poetic expression that was contained in the former document.

Today Section 2 of the Principles of Medical Ethics says "Physicians should strive continually to improve medical knowledge and skill, and should make available to their patients and colleagues the benefits of their professional attainments."

Chapter I, Section 2 of the previous Code of Ethics said the same thing in these words.

"The avowed objective of the profession of medicine is the common good of mankind. Physicians faithful to the ancient tenets of this profession are ever cognizant of the fact that they are trustees of medical knowledge and skill and that they must dispense the benefits of their special attainments in medicine to all who need them. Physicians dedicate their lives to the alleviation of suffering, to the enhancement and prolongation of life, and to the destinies of humanity. They share whatever they have learned and whatever they may discover with their colleagues in every part of the globe. They recognize instinctively that the need for improvement of medical knowledge and skills is never at an end, and while they strive toward satisfaction of this need they are zealous in making available to physicians of good character who possess the desire and the ability to learn the aggregate of progress in medical education, research, and discoveries as they may exist at the time. They do not remain content to limit their activities to the care of the infirm, since they recognize also their useful rank among the vast concourse of citizens on whose shoulders the destiny of our nation rests. At the same time they will resist attempts to debase their services by diverting them to ignoble purposes. In their relationships with patients, with colleagues, and with the public, they maintain under God, as they have down the ages, the most inflexible standards of personal honor."

A.M.A. House of Delegates

109th Annual Meeting—Delegates Report

We found the meeting of the 109th House of Delegates rather calm and cool. This was in sharp contrast to the weather—which was hot. Some of the issues discussed and acted upon in this year's meeting held in Miami Beach, June 13-17, were: Health Care for the Aged (foremost topic), occupational health programs, pharmaceutical issues and other allied groups relations, and our relations with the National Foundation. Many other subjects were brought before the house, but these were the main points concerning policy.

Officially representing Kansas along with us, were your president, Dr. F. E. Wrightman, Sabetha; and alternate delegates, Drs. N. L. Francis, Wichita, and H. St. Clair O'Donnell, Ellsworth. There were several other doctors from Kansas attending the meeting and the Woman's Auxiliary was well represented by the wives.

Elections

Dr. Leonard W. Larson of Bismarck, N. D., former chairman of the A.M.A. Board of Trustees and of the A.M.A. Commission on Medical Care Plans, was named president-elect by unanimous vote. Dr. Larson is to succeed Dr. E. Vincent Askey of Los Angeles as president at the next annual meeting (June, 1961, at New York City).

The A.M.A. 1960 Distinguished Service Award was given to Dr. Charles A. Doan, who will retire next year as dean of the Ohio State University College of Medicine and director of the Health Center in Columbus, Ohio.

Total registration at the last report given and with half a day of the meeting still remaining, had reached 19,107, including 8,706 physicians.

Health Care for the Aged

All year the physicians of Kansas have been receiving information concerning this problem from the A.M.A. and the State office. Unfortunately the problem still exists. Here in part is some of the action taken at the meeting on it.

After considering a variety of reports, resolutions and comments on the subject of Health Care for the Aged, the House of Delegates adopted the following statement as official policy of the American Medical Association:

"Personal medical care is primarily the responsibility of the individual. When he is unable to provide this care for himself, the responsibility should properly pass to his family, the community, the county, the state, and only when all these fail, to the federal government, and then only in conjunction with the other levels of government, in the above order. The determination of medical need should be made by a physician and the determination of eligibility should be made at the local level with local administration and control. The principle of freedom of choice should be preserved. The use of tax funds under the above conditions to pay for such care, whether through the purchase of health insurance or by direct payment, provided local option is assured, is inherent in this concept and is not inconsistent with previous actions of the House of Delegates of the American Medical Association."

The House also urged the Board of Trustees "to initiate a nonpartisan open assembly to which all interested representative groups are invited for the purpose of developing the specifics of a sound approach to the health service and facilities needed by the aged, and that thereafter the American Medical Association present its findings and positive principles to the people."

In connection with an educational program regarding the aged, the House declared that "the American Medical Association increase its educational program regarding employment of those over 65, emphasizing voluntary, gradual and individualized retirement, thereby giving these individuals not only the right to work but the right to live in a free society with dignity and pride."

Earlier, at the opening session, Dr. Louis M. Orr, retiring A.M.A. president, had asked the House to go on record favoring more jobs for the aged, voluntary retirement and a campaign against discrimination because of age, whether it be 40 or 65. The House also gave wholehearted approval to Dr. Askey's urging that state medical societies take an active part in state conferences and other planning activities preceding the January, 1961, White House Conference on Aging.

Pharmaceutical Issues

In the pharmaceutical area the House took two actions—one regarding mail order drug houses and the other involving the development and marketing of pharmaceutical products.

The House agreed with representatives of the pharmacy profession that the unorthodox practice of mail order filling of prescription drugs is not in the best interest of the patient, except where unavoidable because of geographic isolation of the patient. The

statement pointed out that in this process the direct personal relationship, which exists between the patient-physician-pharmacist at the community level and which is essential to the public health and the welfare of patients, is lost.

The House also directed the Board of Trustees to request the Council on Drugs and other appropriate Association councils and committees "to study the pharmaceutical field in its relationship to medicine and the public, to correlate available material, and after consultation with the several branches of clinical medicine, clinical research, and medical education and other interested groups or agencies, submit an objective appraisal to the House of Delegates in June, 1961." The statement pointed out that certain proposals have been made which, if carried out, might impair the future of pharmaceutical research and development, thus retarding the progress of scientific therapy. It also said that the services of the pharmaceutical industry are so vital to the public and to the medical profession that an objective study should be made.

Occupational Health Programs

The House approved a revised statement on the "Scope, Objectives and Functions of Occupational Health Programs," which was originally adopted in June, 1957. The new statement contains no fundamental alterations in A.M.A. policy or ethical relationships, but it adds important new material on the following points:

1. Greater emphasis on the preventative and health maintenance concepts of occupational health programs.
2. A more positive statement of organized medicine's obligation to provide leadership in improving occupational health services by part-time physicians in small industry.
3. Increased emphasis on rehabilitation of the occupationally ill and injured.
4. Inclusion of the proper use of immunization procedures for employes, as approved by the House in 1959.
5. A more adequate statement on the need for teamwork with lay industrial hygienists in tailoring each occupational health program to the particular employe group involved.

In approving the revised guides for occupational health programs, the House also accepted a suggestion that the A.M.A. Council on Occupational Health undertake a project to study and encourage the employment of the physically handicapped.

Allied Health Groups

The House approved the final report of the Committee to Study the Relationships of Medicine with Allied Health Professions and Services and commended it as "a monumental work." The report covers the present situation, future implications and recommendations, including guiding principles and approaches to activate physician leadership. The House strongly recommended that A.M.A. activity in this vitally important area be continued and it approved the appointment of a Board of Trustees committee to carry on the work.

To develop physician leadership in promoting cooperative efforts with allied health professions and services, the report suggested the following A.M.A. activities:

1. A general conference should be held with allied scientists in the basic medical sciences and related disciplines for discussion of matters of common concern related to the creation of permanent, cooperative activities.
2. Specific exploratory conferences should be held with members of segments of science allied to a given area of medical practice with the national medical organizations concerned.
3. General and specific conferences should be held with professional and technical assistants on education, recruitment and coordination of contributions.
4. Through meetings and publications, reciprocal exchange of information should be provided between physicians and allied scientists and members of health professions.
5. Effective, continuing liaison should be established between A.M.A. representatives and professional and technical personnel.

National Foundation

The House took two actions involving relations between the medical profession and the National Foundation. It adopted a statement of policies for the guidance of state medical associations and recommended that they be adopted by all component medical societies. These policies cover such subjects as membership of medical advisory committees at the chapter level, the function of these committees, and basic principles concerning financial assistance for medical care, payment for physicians' services and physicians' responsibilities for constructive leadership in medical advisory activities.

In another action the House directed the Board of Trustees to authorize further conferences with leaders in the National Foundation on the problem of poliomyelitis as it relates to the betterment of the public health and to consider further joint action toward the eradication of polio. The House commended the National Foundation for its outstanding service in the attack against polio, but pointed out that much work remains to be done in public education, vaccination, continuing assistance for polio victims and continued research.

Miscellaneous Actions

In dealing with reports and resolutions on a wide variety of other subjects, the House also:

Strongly reaffirmed its support of the *Blue Shield concept* in voluntary health insurance and approved specific recommendations concerning A.M.A.-Blue Shield relationships;

Approved a contingent appointment of not more than six months for *foreign medical school graduates* who have been accepted for the September, 1960, qualification examination;

Agreed that the American Medical Association should sponsor a *second National Congress on prepaid health insurance;*

Approved a Board of Trustees request to the Postmaster General for a stamp commemorating the *Mayo Brothers;*

Decided that the establishment of a home for *aged and retired physicians* is not warranted at this time.

Approved the establishment of a new *"Scientific Achievement Award"* to be given to a non-physician scientist on special occasions for outstanding work;

Approved the following schedule for future *annual meetings:* Atlantic City, 1963; San Francisco, 1964, and New York City, 1965;

Approved the objectives of the A.M.A. *Commission on the Cost of Medical Care* established by the Board of Trustees and headed by Dr. Louis M. Orr, immediate past president of the Association;

Urged individual members of the Association to take a greater interest and more active part in *public affairs* on all levels;

Reaffirmed its opposition to compulsory inclusion of physicians under Title II of the *Social Security* Act and recommended immediate action by all A.M.A. members who agree with that position;

Called for a review of existing and proposed legislation pertaining to *food and color additives,* with the objection of supporting appropriate measures which are in the public interest;

Urged reform of the *federal tax structure* so as to return to the states and their political subdivisions, their traditional revenue sources;

Asked state and county medical societies to make greater use of A.M.A. *recruitment materials* in presenting medicine's story to the nation's high schools;

Requested the Board of Trustees to initiate a study of present policy regarding the required content and method of preparing *hospital records;*

Commended the Department of Defense and the Air Force for establishing and operating the *Aeromedical Transport Service* and urged that it be maintained at optimum efficiency;

Directed the Board of Trustees to develop *group annuity* and *group disability* insurance programs for Association members; and

Expressed grave concern over the indiscriminate use of *contact lenses.*

Addresses and Awards

Dr. Orr, in his final report to the House at the opening session, urged medical societies to "adopt" rural villages, cities and regions in underdeveloped parts of the world and to send them medical, clinical and hospital supplies.

Dr. Askey, in his inaugural address Tuesday night, declared that medicine faces its greatest challenge in the decade ahead, adding that physicians must prove the effectiveness of medicine practiced in a free society. Dr. John S. Millis (Ph.D.), president of Western Reserve University, Cleveland, Ohio, and guest speaker at the inaugural ceremonies, said the human dilemma of the sixties is an increasing desire for security and authority with a diminishing desire for responsibility.

At the Wednesday session of the House, Dr. Askey urged intensified, accelerated effort in five areas—medical education, preparations for the White House Conference on Aging next January, health insurance and third party relationships, mental health, and membership relations.

Election of Officers

In addition to Dr. Larson, the new president-elect, the following officers were named at the Thursday session:

Dr. William F. Costello of Dover, N. J., vice president; Dr. Norman A. Welch of Boston, re-elected speaker of the House, and Dr. Milford O. Rouse of Dallas, Texas, re-elected vice speaker.

Dr. Gerald D. Dorman of New York City was elected to the Board of Trustees to succeed Dr. Larson, and Dr. James Z. Appel of Lancaster, Pa., was re-elected to the Board.

Elected to the Judicial Council, to succeed Dr. Louis A. Buie of Rochester, Minn., was Dr. James H. Berge of Seattle.

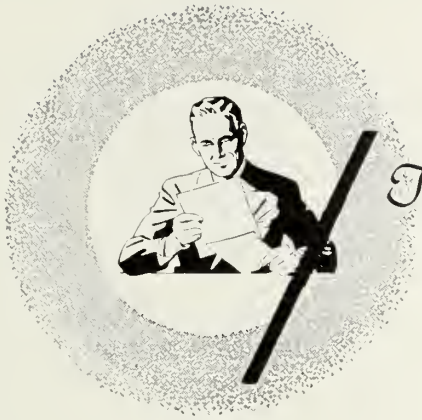
Named to the Council on Medical Education and Hospitals were Dr. William R. Willard of Lexington, Ky., succeeding Dr. James M. Faulkner of Cambridge, Mass., and Dr. Harlan English of Danville, Ill., who was re-elected.

On the Council on Medical Service, the House re-elected Dr. Russell B. Roth of Erie, Pa., and Dr. Hoyt B. Woolley of Idaho Falls.

Dr. George D. Johnson of Spartanburg, S. C., was named to succeed Dr. Pickett on the Council on Constitution and By laws.

On the whole the meeting was very enjoyable and we hope a profitable one for the practice of medicine.

G. F. Gsell, M.D.
L. R. Pyle, M.D.



The Business Side of Medicine

Should You Incorporate Your Medical Building?

FLOYD F. WEHRENBERG, *Kansas City*

The tax savings possible through incorporation of medical buildings as compared to partnership or individual ownership is frequently misunderstood. Actually, if you are in a tax bracket below 47 per cent, there may be a real disadvantage in incorporating your medical building.

The Federal Income Tax on corporate earnings is 30 per cent of the first $25,000 net profit. From this fact many people erroneously reason that if they are in a tax bracket over 30 per cent they will benefit tax-wise. However, this is only true if the earnings are never to be returned to your use. If at any time you need these earnings, you will have to pay regular individual tax rates on the money paid out at dividends. On the other hand, if all earnings remain until the corporation is liquidated, you will have a capital gain taxable at a maximum rate of 25 per cent since the earnings retained will have increased the value of your shares of stock.

Tax Trap

Following is an example of the possible tax trap involved in corporate ownership. Assume that four doctors each invest $10,000 in stock in a medical building corporation, making a total of $40,000. The corporation acquires a $75,000 lot and building and assumes a $35,000 mortgage. If the net profit from operating the building is $5,000 per year, the corporation would pay $1,500 income tax each year and would have $3,500 funds to reduce the mortgage. Over a ten-year period the corporation would pay $15,000 tax and the mortgage would be liquidated. At the end of the ten years, assume that the building is sold for $75,000 and the corporation is liquidated. Each stockholder would receive $18,750 for his original $10,000 invested and would have a capital gain of $8,750 taxable at 25 per cent. The four doctors together would pay an additional tax of $8,750 making the total tax on the corporate income $23,750, or 47.5 per cent. From this it can be seen that if these doctors were in an average top tax bracket of less than 47 per cent, they would have paid more tax through incorporation than they would have by partnership. This illustration shows the minimum tax payable. Remember that if the income had been paid out each year as dividends, it would have been fully taxed as ordinary income and the tax would be considerably higher.

Organizing Costs

Another point to bear in mind besides the possible tax disadvantage is that the cost of organizing a corporation will range from $400 to $1,000 as compared to $25 to $100 for a partnership. Also, the administration and accounting for a corporation are more complicated and expensive.

For those in tax brackets less than 47 per cent, the major advantage to incorporating lies in the limited liability of corporate stockholders as compared to un-

Mr. Wehrenberg is Missouri-Kansas manager, Professional Management Midwest, 4010 Washington Street, Kansas City, Missouri.

limited liability of partners. This can be an important factor if several physicians with individual practices are involved as opposed to a professional partnership or a clinic group. When a corporation is organized for this purpose, it is best to establish a rental that will just meet expenses and yield no profit to be taxed to the corporation.

Another frequent misconception is that incorporation is ideal for transferring funds to children and thereby gaining a tax savings. Because the income of the corporation is subject to the 30 per cent tax up to $25,000 before the children receive it, there is much less advantage to giving children corporate income than there is in giving them dividends or other income through a short-term trust or outright gift.

These are some of the problems that must be considered in deciding on the form of ownership to adopt for a medical building. Such a decision cannot and should not be made without first thoroughly studying all the factors involved. To be sure that your decision will best fit your individual situation, this study should be made by you with the assistance of your legal and financial advisors.

American Diet Poor

Increasing evidence points to a sufficiently close relationship between a diet high in animal fats and the onset of atherosclerosis to warrant "specific recommendations on the composition of the average American diet, Dr. Laurance Kinsell, Director of the Institute for Metabolic Research, Oakland, California, declared in a talk at the annual meeting of the American Geriatrics Society. The two-day meeting was held at the Americana Hotel, Miami, Florida.

Extensive research, stemming from a report 10 years ago on studies conducted in this field at the Institute, has demonstrated that when vegetable fats are substituted for fats of dairy origin in the diet, a major decrease in the level of cholesterol and other fats in the blood results, he said.

Moreover, there is now "general agreement" that elevated blood fats predispose to the development of atherosclerosis, with its catastrophic sequelae of such conditions as strokes, coronary heart disease and the "even more grim occurrence of chronic cerebral deterioration and resultant senility."

Best evidence for this link is the fact that almost 100 per cent of patients with precocious coronary disease (that is, coronary disease occurring earlier than the average period) have "significantly higher blood fats" than normal persons.

There is therefore "good reason to expect that dietary or other procedures which will lower abnormally elevated fats to a normal range" will prevent the development of atherosclerosis or, under some conditions, result in its regression, he stated.

Active Principle

Studies at an institute have shown that the "active principle" in vegetable fats which produced lowering of blood fats in the diet is linoleic acid, a polyunsaturated fatty acid with two bonds.

Additional studies over the past year have shown, for the first time that inclusion of adequate amounts of fatty acids such as linoleic acid in the diet results in an actual decrease in the rate at which cholesterol is formed. The studies were performed with tracer amounts of cholesterol precursors tagged with a radioactive isotope.

It was reported on results of studies conducted for more than six years on patients receiving diets containing much more than average amounts of linoleic acid, and less than average amounts of saturated fatty acids (present in meat, milk, eggs, and hydrogenated shortenings, and margarines).

He noted that many diabetic patients were better controlled in their diabetes on this type of diet than on any other type of diet which had been used; also, that there is evidence that linoleic acid "exerts a significant effect upon the use of sugars as well as upon the way fats are handled."

Results of the studies include the following:

1. Such a diet can be thoroughly palatable;
2. It must be "tailor-made" to the individual, since some individuals require larger amounts of linoleic acid to obtain a given amount of lowering of blood fats than other patients;
3. It calls for "careful education" of the patient and his family;
4. Over this six-year period, no undesirable effects have been noted in any instance, except for occasional food allergy or idiosyncrasy.

It was recently stressed that if the use of a diet relatively high in polyunsaturated and relatively low in saturated fats is "actually of major value" in preventing or halting atherosclerosis, the earlier it is instituted, the better.

The late stages of atherosclerosis are associated with extensive replacement of normal arterial tissues by tough, fibrous tissue and lime salts, and by the time this stage has been reached, the likelihood of any reversibility is remote. It seems probable, therefore, that despite the fact that further period of observation is necessary in order to obtain final answers, the time is already at hand when carefully thought-out recommendations should be made with regard to modification of the American diet.

Blue Shield

Two Major Changes Coming

During the next few months a number of changes are being made in Blue Cross-Blue Shield procedures and since at least two of these changes will be of interest and directly affect Blue Shield physicians and medical assistants, they are being described in the following paragraphs.

New Service Statement Forms

A new Blue Shield Service Statement Form is to be introduced and is expected to be in use by the end of this year. This new form will be the size of an IBM punched card. It is being designed with an eye to eliminating possibilities for errors, as well as to save time and money in operation. It will result in more accurate payments to the physicians, and will make it easier for medical assistants to complete, since information has been reduced to a minimum.

Early this year, this new card-form Service Statement was tried as an experiment with most of the physicians in the Topeka area. About 50 physicians' offices in Topeka participated in the experiment, representing a large share of the claims submitted in that area. It met with practically unanimous approval—doctors and medical assistants stated that it made their work far simpler, as well as helping to eliminate chances for error on their part. The card as it will finally appear has been revised in accordance with suggestions made by the Topeka physicians who used it.

One important change in the new form is the fact that the physician's name and code number will appear on the card when it is received by him. This will tend to greatly reduce errors in payment, it is believed.

The new form now has the approval of the Blue Shield Board of Directors, and has been well received by Topeka physicians where they were actually used for two months before any evaluation was attempted.

Before these new forms are put into use on a state-wide basis this fall, all Blue Shield Participating Physicians will be completely oriented to them.

- A copy of the new form will be mailed to each physician, along with a letter explaining the new procedures.
- With the initial mailing of a supply adequate for several months, will go a complete guide for their use. This guide will come to the doctor in the form of pages to be inserted in the Blue Shield Manual.

It is important to note that this new Service Statement form will be used in standard cases only and will not eliminate the forms for "individual consideration" and "intensive medical care" cases.

One-Check Payment for Clinics

The second time-saving step which is being installed in Blue Shield procedures, is a new system for mailing one-check payments to clinics and partnership offices, if the physician or business manager involved agree.

In the past, a check was mailed for each individual doctor, accompanied by a remittance advice (or explanation of payment).

The new process will result in one single check and single remittance advice covering the service of all physicians in the single office or group. The change is optional and will be made only in situations where the business office or the physicians agree that it will be satisfactory for their office. The plan was presented at the Clinic Managers' meeting in May and met with general approval at that time. In addition to being a less expensive operation for Blue Shield, it will be

an aid to personnel in the business offices in that it will necessitate checking files only one time, rather than each time they receive a check.

Change in Personnel

Announcement was made last month by the Kansas Blue Shield staff of the appointment of Herman Skelton to the position of Assistant Director of Physician Relations, succeeding Jim Parmiter who resigned his position to go into business in Holton.

Mr. Skelton had been a representative in the Physician Relations Department for the past year. Announcement of the change was made by Proctor Redd, Director of Hospital-Physician Relations.

One in Three

One family in every three has a yearly hospital bill. Assume the man who does not believe in prepaid health care goes for three years before requiring hospital or medical care. At the end of these three years he would have saved $266.40 for hospital bills and $133.20 for doctor bills.

His savings for three years would not even cover an uncomplicated operation for removal of gall bladder. The $266.40 might see him through an average hospital stay; but $133.20 would never cover the doctor's bills. The surgical fee for removal of the gall bladder averages $215.00. There would be the anesthetist's fee and the cost of x-rays at least in addition.

Piggy banks are fine—but where illness and injury are concerned no one knows what amount is the correct amount to cover the cost of needed care.

Or, more important, *what if hospital care is necessary before savings have accumulated?*

More than $664,000,000 was paid to physicians in 1959 by the 73 Blue Shield Plans located in North America, the National Association of Blue Shield Plans reported today.

"The payment of $664,301,706 to the medical profession for care rendered Blue Shield members represented an all-time high for a one-year period, and also represented nearly 90 per cent of the total 1959 income of these medical-surgical Plans," John W. Castellucci, executive vice president of the national association reported. Meanwhile, the Plans spent less than 10 per cent of their total income last year for administrative expenses.

The national association reported that payments to physicians over the past decade had increased from nearly $116,000,000 in 1950 to the 1959 figure of $664,301,706.

For the same comparable period, administrative expenses dropped from 13 per cent of total income in 1950 to last year's figure of less than 10 per cent.

"Blue Shield's important contribution to the health care economy of North America is evidenced by its growing role over the past decade in helping millions of its members pay for needed medical and surgical care," Castellucci said. "And not to be overlooked," he added, "is the fact that despite the effects of inflation and the increased cost of doing business, Blue Shield Plans have performed another service to their members and the medical profession by annually expanding a smaller portion of their income dollar to administrative expenses."

Student Thesis

(Continued from page 446)

of red blood cells depositing large amounts of bilirubin into the blood stream and causing large amounts of uric acid to be produced in the metabolic process of breaking down the protein.

Because of the relatively high incidence of abnormal hemoglobins in areas where malaria is prevalent, some individuals surmised that perhaps the S or other abnormal hemoglobins had an increased survival advantage over normal hemoglobin and early studies seemed to indicate that this was true. Liachowitz made a study in Surinam, Africa on 343 negroes which included determination of the incidence of malaria and hemoglobin type. He reported the following incidence of malaria parasites in the various types of hemoglobin.

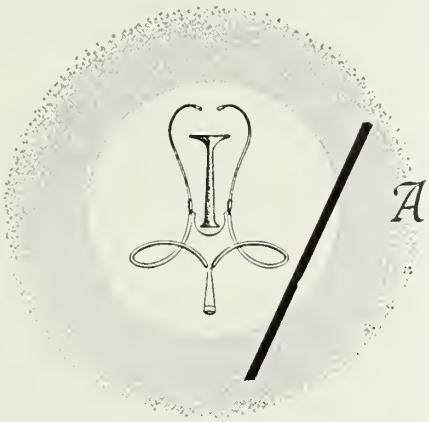
AA	19%
AS	23%
SS	25%
AC	22%

The differences between the incidences among the different groups was not felt to be statistically significant.

A more extensive study was made by Edington on 1255 negroes of Northern Ghana to determine the relationship between hemoglobins S and C and malaria or any other disease prevalent in the area. He broke the data into age groups for each hemoglobin type and concluded that there was no difference in the incidence of malaria in the individuals with abnormal hemoglobins. He also stated that S and C hemoglobins are highly unlikely to protect against pyogenic, pneumococcal disease, schistosomiasis, or tuberculosis.

Many of the abnormal hemoglobins discussed in this paper cause no symptoms and are only found by surveys. Some are found as the result of electrophoresis carried on in the presence of anemia. Mostly they are of academic interest only but may be useful in determining the nature of other diseases which are inherited from a locus close to that of the hemoglobin locus. One possible exception to this is the S hemoglobin which causes symptoms and is common enough that it is seen by most physicians.

Editor's Note: References may be obtained by writing the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 315 W. 4th Street, Topeka, Kansas.



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. *Notice of the session is posted in advance to allow the physician time to make preparations.*

Improvement in the total care of surgical patients will be the goal of 10,000 doctors expected to attend the 46th annual Clinical Congress of the American College of Surgeons in San Francisco, California, October 10 through 14.

Doctors from all parts of the nation and many foreign countries will attend sessions at this largest meeting of surgeons. More than 1,000 participants will take part in the various programs as authors of research reports, teachers of postgraduate courses, participants in panel discussions, lecturers, and operating surgeons in motion pictures and closed-circuit telecasts.

Dr. Leon Goldman, professor and chairman, Department of Surgery, University of California School of Medicine, Berkeley-San Francisco, is chairman of the local committee on arrangements.

Major addresses will be made by Dr. I. S. Ravdin, Philadelphia, chairman, Board of Regents, and incoming president of the College; Dr. Joseph Trueta, Oxford, England, will speak on trauma and the living cell; Dr. Wendell M. Stanley, director of the virus laboratory at University of California, Berkeley, and Nobel winner in chemistry, will deliver the Martin Memorial Lecture, named for the College founder, Franklin H. Martin, on the subject of virus-cancer relationships; Mr. Leslie Philip Le Quesne, London, England, will give the annual Baxter Lecture, speaking on body fluid disturbances resulting from stomach obstruction.

Urology Award—The American Urological Association offers an annual award of $1,000 (first prize of $500, second prize $300, and third prize $200) for essays on the result of some clinical or laboratory research in Urology. Competition is limited to Urologists who have been graduated not more than ten years, and to hospital internes and residents doing research work in Urology.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Hotel Biltmore, Los Angeles, California, May 22-25, 1961.

For full particulars write the Executive Secretary, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before December 1, 1960.

Effective June 15, 1960, the Federal Aviation Agency will require that student and private pilots be given their medical examinations by designated medical examiners. This rule reinstates a practice which was in effect from 1926 until 1945.

In announcing the reestablishment of this practice, Dr. James L. Goddard, the Civil Air Surgeon, has emphasized his previous statements that any physician may be considered eligible for designation as an examiner.

In order to have a better understanding of the proposed rule, I wish to point out that it is designed to accomplish the following needed improvements in the administration of the Agency's medical certification program.

1. To maintain a group of medical examiners who are clearly responsive to the needs of public safety in the performance of examinations and the issuance of medical certificates to airmen.
2. To permit the administration of training programs to maintain the quality of performance of medical examiners and to permit the dissemination of special instructions pertaining to the needs of civil aviation.
3. To bring into the program those physicians who have the professional qualifications and a demonstrated interest in the medical certification field.
4. This would permit the designation of any

qualified physician who, by his application, has demonstrated interest in the program.

Those physicians in localities where flying activities are conducted may wish to consider filing an application for designation by writing to the Civil Air Surgeon, Federal Aviation Agency, Washington 25, D. C.

Designation as an aviation medical examiner will qualify the designee to examine both Class II (commercial) and Class III (student and private) airmen, including control tower operators. Instructions concerning the required procedures, standards, and equipment will be supplied to those who apply.

Since commercial and airline transport pilots have always been required to obtain examinations from specifically selected physicians, there are presently some 2,000 aviation medical examiners previously designated and located throughout the country. Expanding aviation activities will result in a continuing need for additional examiners. There are at present some 400,000 active civil airmen of whom approximately 240,000 are examined each year.

For your Medical Meeting Timetables 1961
Meetings of the American College of Surgeons:

January

Sectional Meeting. Hotel Dinkler-Tutwiler, *Birmingham, Alabama, January 16, 17, 18.* Dr. Arthur I. Chenowith, Birmingham, Local Chairman.

Sectional Meeting. Hotels Del Prado, Reforma, Vista Hermosa, El Presidente, Alffer, Continental Hilton, *Mexico City, Mexico, January 23, 24, 25, 26.* Dr. Gustavo Baz Prada, Honorary Chairman; Dr. Eduardo Castro, Chairman; Dr. Francisco Valdes la Vallina, Co-Chairman; Dr. Lorenzo Fuentes Ogarrio, Secretary.

NOTE: Descriptive literature about this meeting, with hotel and transportation facilities, pre-and-post meeting tours, and advance registration forms are available from the College headquarters.

March

Four-Day Sectional Meeting for Surgeons and Graduate Nurses. Hotels Bellevue-Stratford, Ben Franklin, and Sylvania, *Philadelphia, Pennsylvania, March 6, 7, 8, 9.* Dr. Jonathan E. Rhoads, Philadelphia, Local Chairman for Surgeons Meeting. Miss Iris Ann Machlan, R.N., and Miss Mary Rieser, R.N., Philadelphia, Co-Chairmen for Nurses Meeting.

April

Sectional Meeting. The Fort Garry Hotel, *Winnipeg, Manitoba. April 6, 7, 8.* Dr. Kenneth R. Trueman, Winnipeg, Local Chairman.

NOTE: All Sectional Meetings are under the general supervision of Dr. H. Prather Saunders, Associate Director, American College of Surgeons. FOR ALL INFORMATION, write to: Dr. William E. Adams, Secretary, American College of Surgeons, 40 East Erie Street, Chicago 11, Illinois.

Skin Specialist Warns Suntan Enthusiasts

A Chicago dermatologist said recently that many people work hard to convert "a peaches-and-cream complexion" into "the sun-battered skin of a desert rat."

Writing in the June issue of *GP* magazine, published monthly by the American Academy of General Practice, Dr. William Becker, Jr., adds that plain vanishing cream, containing 10 per cent para-aminobenzoic acid, "affords 30 times more protection" than many commercial products. Dr. Becker is clinical assistant professor of dermatology at the University of Illinois.

"Few people are aware," Dr. Becker points out, "that after a single, moderately-severe sunburn the blood vessels are abnormal for four to 15 months."

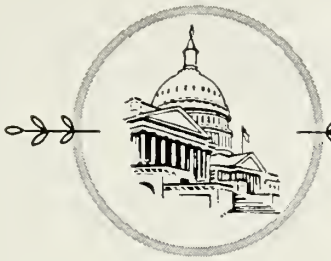
Although over-exposure ages the skin and can cause cancer, sunlight does have beneficial effects, Dr. Becker explains. For example, it produces vitamin D in the skin and causes an unexplained drop in blood pressure and serum cholesterol. At the same time, it causes the skin to become dry and lose its elasticity. The color darkens and often becomes yellowish or blotchy brown. Prolonged over-exposure causes a condition known as "farmers" or "sailors" skin.

Historically, a deep tan has always had social significance:

"Older cultures regarded tanning and weathering of the skin by sunlight as stigmata of the lower classes. The pale translucent complexion was most desired. This identified a personage as above laboring in the fields. The industrial revolution moved the lower classes indoors. Increasing leisure has altered the attitude toward outside activity. Many segments of current American society endow a deep tan, especially out of season, with an aura of virility, leisure and wealth. The last two decades have seen Americans indulge in historically unique sun worship—ancient peoples offered sacrifices other than themselves," Dr. Becker said.

The author points out that benzophenones, chemicals now being added to plastics, paints, varnishes, etc., may someday help prevent sunburns and skin damage, adding that although experimental work is in progress, no such commercial preparations are available today.

"We must accept the fact that the white skin is not physiologically able to tolerate a large amount of strong ultraviolet light. . . . No simple, absolutely foolproof method of preventing sunburn is known," Dr. Becker concludes.



Washington HIGHLIGHTS

This summary of Washington news is prepared by the A.M.A. Washington Office for distribution to state medical journals.

Congress returned to work this month to take up its unfinished business, including the controversial issue of health care for the aged, an atmosphere dominated by election-year politics.

The three or four week, tag-end session of Congress loomed as one of the most important meetings in the past decade as far as possible impact on the medical profession is concerned.

The lawmakers are slated to decide whether to embark the Federal government on a course that could threaten the private practice of medicine, or to adopt a voluntary program that would pose no such danger.

The omnibus social security bill approved by the House Ways and Means Committee was easily cleared by the House, 381 to 23, and sent to the Senate Finance Committee, which held two days of hearings. The measure contained a voluntary, Federal-State program for assisting needy aged persons meet their health care costs. Both the Administration and the American Medical Association endorsed the House measure as in keeping with the concept of giving the states prime responsibility for helping their citizens, for aiding those who are most in need of help, and for avoiding the compulsory aspects of health plans involving the social security mechanism.

A vote by the Finance Committee, headed by Sen. Harry F. Byrd (D., Va.), was scheduled shortly after the Senate resumed operations in August. Whatever action the Committee took, however, proponents of schemes such as the Forand bill to provide a compulsory, federal medical program promised a determined fight on the floor of the Senate.

Ike Against Forand-Type Legislation

In the event Congress should approve a government medicine plan, opponents were counting on a Presidential veto to kill the measure. The Chief Executive repeatedly has asserted in strong language his all-out opposition to any compulsory plan for health care financing.

At the Senate Finance Committee hearing, Arthur S. Flemming, Secretary of Health, Education and Welfare, renewed the Administration's flat stand against the social security avenue to financing health costs. Such a plan, he said, would inevitably lead to pressures for expanding the benefits and lowering or eliminating the age requirement. Under such circumstances, a 15 per cent or 20 per cent social security payroll tax would not be too far off, he said. "We believe it is unsound to assume that revenue possibilities from a payroll tax are limitless."

Dr. Leonard W. Larson, President-elect of the American Medical Association, told the Committee the House bill is the "antithesis of the centralized, socialized, statist approach of the proposals advocating national compulsory health insurance.

"To those critics who call this program modest, we say that fiscal irresponsibility, unpredictable cost and maximum nationalization are not the accepted criteria for good legislation," he testified.

A spokesman for the insurance industry pointed out "giant strides" made by private health insurance in recent years in covering aged persons. E. J. Faulkner declared that one of the most prevalent and erroneous assumptions on the matter is that most of the aged aren't able to contribute to financing their own health care costs.

The Social Security health bills, he said, "would impair or destroy the private practice of medicine, would add immeasurably to our already crushing tax burden, would aggravate our severe public fiscal problems, and would entail other undesirable consequences."

Labor Still Pushing

In other testimony, the AFL-CIO again urged enactment of a Social Security health bill; the American Osteopathic Association and the International Chiropractors Association urged that health benefits included in any bill include the services of osteopaths and chiropractors, respectively.

On another legislative proposal of interest to the medical profession—the Keogh-Simpson bill—a Senate debate was scheduled this month. Sen. Gordon Allott (R., Colo.) said in a Senate speech that "I believe that this legislation will have the overwhelming support of this body."

The bill, which would encourage retirement savings by the self-employed such as lawyers, small

businessmen and physicians, has already been approved by the House. The Senate bill, voted by the Senate Finance Committee, would require participating self-employed to establish retirement plans for their employes.

How Safe Is Your Car?

No matter how good your brakes are, they can't stop your car.

The thought that brakes do stop a car is one of the many misunderstandings causing mounting highway accidents.

Actually, even the finest brakes can do no more than stop your wheels from spinning. It's up to your tires to stop the car.

Sound obvious? Then answer this question: Right now, what is the condition of the cord inside your tires? Are the strands firm and unbroken—or rotted and weak?

Here's another question which sounds obvious, but which few motorists can answer: Do your headlights work? Don't answer "yes" just because both lights turn on and off. Almost worse than no light at all is one that glares too much in the eyes of a driver of an approaching automobile.

Faulty tires and lights are just two of the many common causes of highway accidents, and mechanical defects are far more common than most people realize. A typical motorist might guess that only five or 10 per cent of all cars on the road are in faulty condition, but the State of Texas recently found, after an official inspection of four million vehicles, that 43 per cent were unsafe for today's traffic conditions.

Do mechanical defects and tires really amount to much when it comes to safety? Pennsylvania Turnpike officials proved that they do. Starting in 1957, officials urged toll booth attendants to bar cars with badly worn tires. To date, 12,000 drivers have been told to get better tires or keep off the Turnpike.

Result: Deaths from accidents traceable to poor tires have dropped from 26 per cent of all fatal accidents to less than five per cent.

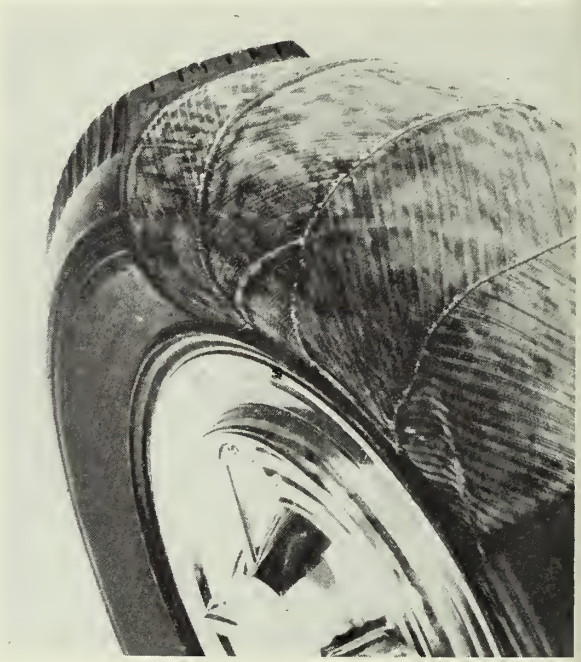
Even the five per cent might have been eliminated had toll booth attendants been able to look inside the tires at the cord, for although nylon tire cord is not damaged by water and moisture penetrating into cuts and bruises, tires made with other fibers are easily affected if the rubber coating is cut, making them liable to dangerous failures. So when checking for air pressure at the service station, check for cuts too.

As another precaution, no matter what the driving conditions or the distances to be covered are, seat belts are important safety equipment and should be worn at all times.

Two thirds of fatal accidents occur within 25 miles of the victims' homes. Every crash is a "somebody's neighborhood" accident.

Safety belts keep car occupants from being thrown against windshield and dashboard. They absorb the momentum of forward thrust caused by sudden stops. They keep passengers within the car in case of accident. Safety belts, therefore, should be chosen with the same care as tires.

The National Safety Council recommends that you insist on a belt which meets the standards set forth by the Society of Automotive Engineers. Many manufacturers are using fibers such as nylon to measure up to these requirements which cover matters such as breaking strength and resistance to corrosion. Ease of releasing the buckle is another important factor.



A section of the rubber casing of this tire has been stripped away to reveal the tire cord which supplies the "muscle" that resists the crushing weight and impacts of driving. Drivers checking air pressure at the service station should check also for cuts as well as worn treads for cords other than nylon may deteriorate with moisture and dangerously weaken the tire.

A Cornell University study has revealed that only 2.6 per cent of people within automobiles, compared with 12.8 per cent thrown through open car doors, are fatally injured in accidents. Safety studies also reveal that people with seat belts are 35 to 60 per cent safer than those without them.

Belts guard your energy as well as your safety. On long trips, safety belts reduce fatigue by reducing the strain of staying in place on normal stops and turns. When properly adjusted, seat belts fit comfortably but snugly to make this possible.

KMS Obituaries

HENRY S. DREHER, SR., M.D.

Dr. Harry S. Dreher, Sr., 66, prominent Salina physician, died July 12 in St. Luke's Hospital, Denver, Colo., where he had been a patient three weeks.

Death was attributed to complications following major surgery.

Dr. Dreher came to Salina from Luray in 1945 to become associated with the Mowery Clinic. Later, two sons joined him in practice in the clinic. Dr. Henry S. Dreher, Jr., came in 1947, and Dr. Richard L. Dreher, in 1952. Another son, Warren Dell, lives in Denver.

Dr. Dreher was born Sept. 14, 1893, in La Cygne, Kansas. He was graduated from the Oklahoma University School of Medicine in 1915 and from 1917 to 1919 served in the U. S. Army Medical Corps. He practiced medicine in Luray from 1919 to 1945 when he came to Salina.

Dr. Dreher was prominent in many activities of the medical profession.

He was a member of the Saline County Medical Society, Golden Belt Medical Society, and the American Academy of General Practice. He was a past president of the Saline County Medical Society.

He had served on the Membership and Ethics committee and the Committee of Education of the Kansas Chapter of the American Academy of General Practice.

Dr. Dreher was a member of the board of directors of the Kansas Blue Shield for three years.

Surviving besides the three sons are the widow, Eva, and two brothers of Detroit, Michigan, five sisters, and ten grandchildren.

EDWARD HENRY ATKIN, M.D.

Dr. Edward Henry Atkin, 74, a physician and surgeon at Hoisington, Kansas, for 52 years, died June 23 in a Wichita hospital.

Dr. Atkin was born in Moreland, Kansas. He was a graduate of the University of Louisville, Ky., where he studied medicine.

His survivors include a daughter, Mrs. Kathryn Robison, Hoisington; three sisters, and two grandchildren.

Dr. Atkin owned and operated the Atkin Hospital in Hoisington for many years. His hospital was in operation until the present hospital was opened. He was a member of the Missouri Pacific medical staff in Hoisington for 35 years. He served the City of Hoisington as city commissioner and also as mayor in earlier years. He also served in the medical corps in World War I—serving in France and Germany for three years.

He was a member of the Episcopal church, International College of Surgeons, and the Barton County Medical Society.

WILLIAM T. WILKENING, M.D.

Dr. William T. Wilkening, a Fort Scott physician since 1919, died June 27 at Mercy Hospital, where he had been a patient since March 20.

Dr. Wilkening, 74, came to Fort Scott from St. Louis after graduating from Washington University Medical School. He began a practice with Dr. Robert Aikman in the Fort Scott Drug Building, May 20, 1919. In 1925, he moved to the present location in the Stout Building.

Born Oct. 8, 1885, at Oak Ridge, Mo., he was the son of William and Louisa Grebe Wilkening. He was married at St. Louis April 15, 1920, to Bethune McKown, who survives.

Other survivors include a daughter, Mrs. Vernon C. Bailey, Hartsdale, N. Y.; two brothers; two sisters; and three grandchildren.

Dr. Wilkening was a member of the American College of Surgeons, the Bourbon County Medical Assn., and was a staff member at Mercy Hospital.

FRANK X. LENSKI, M.D.

Dr. Frank X. Lenski, 64, widely known Iola surgeon and Democratic leader, died in his office June 18, which was his birthday. Death was attributed to heart disease.

In addition to his extensive medical practice, he was interested in an implement business and owned several farms in the community.

Dr. Lenski was born at Pittsburg, attended the Pittsburg schools and state college. He graduated from the University of Kansas before taking his medical degree in 1922 from Northwestern University. During World War I he was a member of the R.O.T.C.

He began practicing medicine and surgery in Iola in 1923.

Long interested in politics, Dr. Lenski had been chairman of the Allen County Democratic committee for a number of years and attended the past two national conventions of the party.

He was a member of the advisory board of Norton State Hospital. He also belonged to St. John's Catholic Church, the Knights of Columbus, and the Elks Lodge.

Dr. Lenski is survived by his wife of the home; two sons, Dr. Frank X. Lenski, Jr., Iola, and John J. Lenski, Des Moines, Ia.; three daughters, Miss Marlene Lenski, Iola; Mrs. Thomas Reidy, St. Louis; Dr. Marita Scimeca, Atchison; a brother and sister and 10 grandchildren.

Personalities—IN KANSAS MEDICINE

Dr. Prescott Thompson, Topeka, attended the 17th annual meeting of the American Geriatrics Society in Miami Beach June 9-10. He also participated in a seminar on Housing and Living Arrangements for the Later Years at Lake Mohonk, N. Y., June 13-18.

"The Nature of the Gifted and the Reluctant Learner" was the title of the talk given by **Dr. J. Cotter Hirschberg,** Topeka, at Washburn University's workshop on mental health in June.

Dr. J. H. A. Peck, who has practiced medicine in the St. Francis area for 39 years, was honored at his birthday anniversary party in the city park here. Hundreds attended.

During his tenure, Dr. Peck has delivered 2,469 babies or more than half the present Cheyenne County population. He has performed 4,822 operations. He has served as president of the Society and each year is parade chairman for the Cheyenne County fair.

Drs. Robert Woods and **Joseph Stein,** Topeka, attended the meeting of the American Neurological Association in Boston in June. Doctor Stein stayed for a meeting of the American EEG Society in West Horwich, Mass.

Fifty years ago **Dr. H. L. Galloway,** graduated from medical school. He took his Internship at Mercy Hospital previous to doctoring in Anthony on September 1, 1911. (49 years in Anthony this fall.)

In 1929 the Galloway Hospital in Anthony was established and Dr. Galloway is still Chief of Staff.

On September 1, 1914 Dr. Galloway came to the calling of the Hardtner community to associate at the Achenbach Memorial Hospital.

Dr. C. H. Munger, director of the Lyon County Health Department for 28 years, informed the county commissioners he intends to retire October 1.

Dr. Howard Wagenblast, director of the Salina-Saline County health department, has resigned, effective August 31.

Dr. Wagenblast submitted his resignation at a meeting of the health department board of directors. His offer to remain in the office on a part-time basis for a time beyond August 31 was accepted by the board. He is planning to go into private practice.

NEW MEMBERS

The JOURNAL *takes this opportunity to welcome these new members into the Kansas Medical Society.*

Calvin H. Agnew, M.D.
K. U. Medical Center
39th & Rainbow Blvd.
Kansas City 12, Kansas

Julius W. Bell, M.D.
Professional Building
Abilene, Kansas

James A. Bertone, M.D.
605½ N. Broadway
Pittsburg, Kansas

Marvin I. Dunn, M.D.
K. U. Medical Center
39th & Rainbow Blvd.
Kansas City 12, Kansas

Beverly J. Endres-Burdette, M.D.
5609 Birch
Mission, Kansas

Robert B. Hodgson, M.D.
4100 W. 72nd Terrace
Prairie Village, Kansas

William E. Evans, Jr., M.D.
8215 Metcalf
Overland Park, Kansas

Marietta Houston, M.D.
Menninger Foundation
Topeka, Kansas

Otto D. Klassen, M.D.
3420 E. Douglas
Wichita 8, Kansas

Donald W. Selzer, M.D.
112 Medical Arts Building
10th & Horne
Topeka, Kansas

Archibald O. Tetzlaff, M.D.
4821 Booth
Kansas City 3, Kansas

Book REVIEWS

CHRISTOPHER'S TEXTBOOK OF SURGERY. Edited by Loyal Davis, M.D., 7th Edition. 1551 pages, 1597 illustrations. $17.00. Philadelphia and London. W. B. Saunders Co., 1960.

The Seventh Edition of Christopher's Textbook of Surgery, edited by Loyal Davis, M.D., as in previous editions, is comprised of chapters contributed by various authorities in general surgery and related surgical specialties including anesthesiology, orthopedics, urology, neurosurgery, gynecology, thoracic surgery, and others. In addition to complete coverage of the pathogenesis, recognition, incidence and management of disease entities of surgical importance, parts of the book are devoted to the history of surgery, qualifications of the surgeon, and an excellent new chapter on surgical judgement is appended. This new edition incorporates recent surgical advances, some chapters having been rewritten by new contributors.

Because of its completeness, the book should be of value to all students of surgery and is so written as to be interesting and informative to the practicing surgeon as well as to the medical student. It should be useful to the resident in surgery as a review in preparation for examinations. A source for further study is provided in the bibliography supplied at the end of each chapter. The book reads easily and is liberally and appropriately illustrated—*D.R.M.*

YOUR HEART. A handbook for laymen. H. M. Marvin, M.D., Doubleday and Co., New York, price $4.50, 335 pages, 1960, illustrated.

Your Heart, a handbook for the layman, written by Dr. H. M. Marvin, is a book that I would recommend to be used to help educate the patient who has had a scare from the words "heart trouble." This book will save a doctor a good deal of time in explaining to the patient the intricacies, general background, and the anatomy of this organ. It is written, of course, by a man who has dealt with lay persons through the American Heart Association and it is presented well for a person who is not familiar with professional terms. The book is a good source of quick reference for the physician in order to help him describe the heart in more lay terms.

The text has a considerable number of illustrations and diagrams which show the inside and working parts of the heart. It discusses some of the care that should be used by the patient that has been informed of a heart condition. This book will be easily read by the majority of patients and will be informative.—*F.D.W.*

TEXTBOOK OF PEDIATRICS. 7th Edition. Waldo E. Nelson, M.D., W. B. Saunders Co., Philadelphia, 1959, price $16.50, 1462 pages.

This new 7th edition of Nelson's *Textbook of Pediatrics*—remains an excellent pediatric textbook. It certainly covers, in its 1400 odd pages, the most up-to-date concepts in practices of pediatrics. It is useful both to the Pediatrician and to the general practitioner, as a reference text, and also covers the entire aspect of child care; from the pre-natal period through adolescence.

There are revisions, and additions—especially in the sections on the "Newborn Infant"—"Diseases of Metabolism" with especially good sections on the amino-acid metabolism and congenital diseases arising therefrom.

The section on parenteral fluid therapy has been re-written, as well as the respiratory tract, the nervous system and the cerebral palsy section. Emotional problems are handled in an improved fashion in this text, and several new additions have been added, including tropical eosinophilia, and cirrhosis of the liver.

With the constant changes in viral infections, the section on infectious disease has been brought up to date.

It is the reviewer's opinion that any physician who treats children will find this text useful in his practice, with the answers to everyday problems effecting children.—*W.H.C.*

The Kansas Medical Society—1960-1961

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President.....Frederick E. Wrightman, Sabetha
President-Elect.....Harold M. Glover, Newton
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First Vice-President.....Norton L. Francis, Wichita
Second Vice-President.....H. St. Clair O'Donnell, Ellsworth
Secretary.....George E. Burket, Jr., Kingman
Treasurer.....John L. Lattimore, Topeka
A.M.A. Delegate, 1960-1962...George F. Gsell, Wichita
A.M.A. Alternate, 1960-1962..H. St. Clair O'Donnell, Ellsworth
A.M.A. Delegate, 1961-1963...Lucien R. Pyle, Topeka
A.M.A. Alternate, 1961-1963..Glenn R. Peters, Kansas City
Chairman of Editorial Board..Orville R. Clark, Topeka

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District 5.....Ralph G. Ball, Manhattan
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District 8.....J. Gordon Claypool, Howard
District 9.....John C. Mitchell, Salina
District 10.....John N. Blank, Hutchinson
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District 12.....Albert C. Hatcher, Wellington
District 13.....H. St. Clair O'Donnell, Ellsworth
District 14.....Clair J. Cavanaugh, Great Bend
District 15.....Lyle G. Glenn, Protection
District 16.....Edward F. Steichen, Lenora
District 17.....John O. Austin, Garden City

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Allen	A. R. Chambers, Iola	L. D. Robinson, Iola
Anderson	T. M. Dougherty, Garnett	Claib B. Harris, Jr., Garnett
Atchison	Edwin T. Wulff, Atchison	L. E. Harrington, Atchison
Barton	Anol Beahm, Great Bend	Robert Unrein, Hoisington
Bourbon	Pratt Irby, Fort Scott	Guy I. Akers, Fort Scott
Brown	James Scanlon, Horton	R. T. Nichols, Hiawatha
Butler	Ray F. Lowry, El Dorado	Kenneth B. Dellett, El Dorado
Central Kansas	Joseph Seitz, Ellsworth	Eugene T. Siler, Hays
Chase		
Chautauqua	Ivan E. Lloyd, Sedan	William K. Walker, Sedan
Cherokee	F. H. Jones, Columbus	H. L. Bogan, Baxter Springs
Clay	S. A. Anderson, Clay Center	Forrest D. Taylor, Clay Center
Cloud	M. C. Pearson, Concordia	F. P. Thornton, Jr., Concordia
Coffey	A. B. McConnell, Burlington	Henry J. Dick, Jr., Burlington
Cowley	G. L. Norris, Winfield	Edgar D. Hinshaw, Arkansas City
Crawford	R. W. Friggeri, Girard	Howard R. Elliott, Pittsburg
Dickinson	Fred Dozier, Herington	Roger D. Warren, Enterprise
Doniphan	Emerson D. Yoder, Denton	Robert L. Corder, Highland
Douglas	Howard L. Wilcox, Lawrence	James S. Reed, Lawrence
Edwards	M. Dale Atwood, Kinsley	F. G. Meckfessel, Lewis
Finney	J. W. Turner, Garden City	H. M. Wiley, Garden City
Ford	E. W. Schwartz, Dodge City	R. E. Speirs, Dodge City
Franklin	Louis N. Speer, Ottawa	David G. Laury, Ottawa
Geary	C. V. Minnick, Junction City	H. L. Bunker, Jr., Junction City
Greenwood	John H. Basham, Eureka	Robert L. Obourn, Eureka
Harvey	Frances A. Allen, Newton	Lee S. Fent, Newton
Iroquois	Ronald McCoy, Coldwater	Charles G. Stephens, Minneola
Jackson	E. C. Moser, Holton	M. Ross Moser, Holton
Jefferson	W. A. R. Madison, Nortonville	C. D. Townes, Perry
Jewell	C. S. Hershner, Esbon	R. M. Owensby, Mankato
Johnson	A. S. Reece, Gardner	R. E. Delphia, Olathe
Labette	V. L. Jackson, Altamont	J. D. Pace, Parsons
Leavenworth	Kenneth Powell, Leavenworth	J. M. Graham, Leavenworth
Lyon	K. L. Lohmeyer, Emporia	C. H. Munger, Emporia
McPherson	Weir Pierson, McPherson	W. J. Collier, McPherson
Marion	A. C. Eitzen, Hillsboro	R. L. Krause, Goessel
Marshall	J. W. Randell, Marysville	D. M. Diefendorf, Waterville
Miami	Rex Stanley, Paola	James Fowler, Osawatomie
Mitchell	H. B. Vallette, Beloit	J. F. Nienstedt, Beloit
Montgomery	William T. Read, Coffeyville	Albert E. Martin, Jr., Coffeyville
Morris	Robert W. Blackburn, Council Grove	James E. Schultz, Council Grove
Nemaha	V. E. Brown, Sabetha	Cecil C. Hunnicutt, Sabetha
Neosho	Reuben J. Burkman, Chanute	Donald E. Ray, Chanute
Northwest Kansas	Floyd L. Smith, Colby	Wayne G. Parker, Hoxie
Osage	Niles M. Stout, Lyndon	J. L. Ruble, Jr., Overbrook
Osborne	J. E. Hodgson, Downs	J. E. Henshall, Osborne
Pawnee	O. R. Cram, Larned	H. L. Patterson, Larned
Pottawatomie		Fred E. Brown, St. Marys
Pratt-Kingman	F. G. Freeman, Pratt	J. W. Jacks, Pratt
Reno	V. R. Moorman, Hutchinson	Tom W. Stivers, Hutchinson
Republic	P. L. Beiderwell, Belleville	H. D. Doubek, Belleville
Rice	David H. Rau, Lyons	P. E. Beauchamp, Sterling
Riley	Kenneth M. Boese, Manhattan	George S. Bascom, Manhattan
Rush-Ness	F. K. Bowser, La Crosse	R. E. Grene, La Crosse
Saline	Henry S. Dreher, Salina	Frederick A. Gans, Salina
Sedgwick	Clyde W. Miller, Wichita	Paul A. Kaelson, Jr., Wichita
Seward	Otto F. Prochazka, Liberal	Harold Dittemore, Liberal
Shawnee	W. O. Martin, Topeka	Richard Beach, Topeka
Smith	D. A. Hardman, Smith Center	V. E. Watts, Smith Center
South Central Tri-County	P. M. Hulett, Anthony	M. D. Christensen, Kiowa
Stafford	O. W. Longwood, Stafford	C. Everett Brown, Stafford
Washington		L. L. Huntley, Washington
Wilson	Raymond J. Beal, Fredonia	C. E. Stevenson, Neodesha
Woodson	A. C. Dingus, Yates Center	H. A. West, Yates Center
Wyandotte	Wray Enders, Kansas City	William W. Abrams, Kansas City

Scientific
ARTICLES

Cancer of the Larynx

Using Radiation Therapy for Treatment

GALEN M. TICE, M.D., ***Kansas City***

It would seem logical for all of us to occasionally summarize our activities as physicians. Prompted by a request to participate in a round table discussion of treatment of cancer of the larynx we surveyed all cases that have been referred to the department of Radiology for therapy. These cases were seen between September 1, 1930 and January 1, 1960, an interval span of almost 30 years. Our series includes in each instance a diagnosis of carcinoma of the larynx by the pathologist as the one criteria for including the case in our study. This broad coverage included intrinsic carcinoma of the larynx, extrinsic carcinoma of the larynx, metastatic carcinoma to the adjacent glands, and recurrent carcinoma following surgery. Nothing was left out of the review that had any remote relationship to carcinoma of the larynx. Actually many, in fact most, of our cases should fall into the classification of laryngo-pharyngeal carcinoma, since the involvement in most cases was not only of the larynx but also of the tissues below and above the larynx. Only 11 cases could be described as confined to the true cords with or without mobility of cords. This included the Stage I and II cases.

It was discouraging to go through the charts to find a description of the degree of involvement. In few cases was there an attempt made to describe the lesion as extrinsic or intrinsic. This could be explained by the lack of experience on the part of the intern making the observation and the lack of time of the laryngologist to adequately describe the lesion found. In more recent years with an adequate resident staff a description is much more satisfactorily given. We attempted by reading the charts to roughly classify the cases as intrinsic or extrinsic carcinoma based on the meager description found in the chart. In far advanced cases which might be described as cancer of the laryngo-pharynx the question must be raised as to the origin of the lesion. The tumor could have arisen in the endolarynx or it could have arisen in adjacent tissues involving the larynx secondarily.

Our experience in treatment of cancer of the larynx is limited to a small number of cases in which the tumor was early. In a series of 11 early cases the five year survival was 73 per cent. This compares favorably with the experience of others. In far advanced cancers, in many instances so advanced that the surgeon considered radical surgery a worthless procedure, radiation may produce palliation. In our total experience of 140 cases, all but 11 of which were advanced or recurrent following surgery, 17 per cent survived for five years or more. Many of the cases referred for radiation therapy had nodes. Of this number only six survived for more than one year.

Diagnosis

The description of the degree of tumor involvement is the function of a well trained laryngologist. Most radiologists do not have the instruments or training necessary to make a correct observation. The radiologist may contribute materially with properly taken films, anterior, posterior and lateral; laminographs and films taken after coating of the walls of the larynx with an opaque media. The ultimate diagnosis must depend on the report of the pathologist.

Age and Sex

Cancer of the larynx is predominantly a disease of the aged male. In our series of 140 cases 9.5 per cent were female, 130 of the total cases or 93 per cent were over 50 years of age.

Classification

A number of different methods of classification have been used in the past. The most common and perhaps the least desirable is the classification of intrinsic and extrinsic carcinoma of the larynx. The presently accepted classification is that recommended by the committee on tumor classification of the International Congress of Radiology, 1953.[7]

ANATOMICAL SITES OF CANCER OF THE LARYNX

Carcinoma of the supraglottis
Carcinoma of the glottis (vocal cords)
Carcinoma of the subglottis
Carcinoma occurring in border line areas

Stage I—Carcinoma related to the mucous membrane, full mobility of the larynx retained.
Stage II—Carcinoma infiltrating but not extending beyond the larynx; mobility of larynx impaired or lost.
Stage III—Carcinoma extending beyond the larynx or lymph nodes palpable but moveable.
Stage IV—Involvement of skin or lymph nodes fixed or distant metastasis present.

Therapy

Neither radiation nor surgery has been uniformly accepted as treatment of cancer of the larynx. It is difficult to read a report of a series of cases and decide what has been accomplished by treatment because of lack of uniformity in terminology, staging and classification of disease. When the physician is presented with an early carcinoma of the larynx he must accept the fact that either surgery or radiation will give comparable results. The young individual who must use his voice to make a living will of course be handicapped by laryngectomy and he will have permanent vocal disturbance if laryngo-fissure is done. If radiation is used the voice should be normal following therapy. In the literature the possibility of ultimate cartilage necrosis is mentioned. This is seldom seen. With proper radiation therapy it is a negligible hazard. If there is a failure to cure a lesion by radiation therapy or if a new lesion occurs years later, surgery is always possible after radiation, and it is the consensus of competent surgeons that the radiation previously given is not a serious handicap to subsequent surgery. In the treatment of early carcinoma of the larynx where a decision must be made between surgery and radiation certainly the quality of each type of service available must be evaluated in arriving at an adequate decision.

We have used over the years various types of radiation apparatus and various techniques. We have been influenced, as have all radiologists, by the work of Coutard[2] who was one of the first to protract this therapy over a relatively long period of time. Most of our cases have been treated with a depth dose of 5,000 r. to the tumor given in a routine of 30 treatments. These were given for a period of five or six days each week. During most of the time we have used the 250 k.v.p. machine. The ray was filtered by a Thoreus II filter which resulted in a 2.0 mm. h.v.l. of copper. Two opposing fields were directed at the tumor. We used the smallest portal feasible to cover the lesion. If there were glands present the size of the portal was increased. We expected in each instance to cause necrosis of skin in the area through which the radiation was directed. This resulted in the skin peeling off down to the corium. In the last 18 months we have had available a cobalt unit. We have increased our dose to 6,000 r. delivered in 30 treatments. It is too early to evaluate results. We do know definitely that the cobalt unit is easier on the patient, since there is no skin reaction and the machine is easier for the radiologist to use. Many of

TABLE I

TYPE OF CASE REFERRED FOR RADIATION THERAPY

	Number	*Per Cent of Total*
Node metastasis when first seen	61	44
No obvious metastasis; no previous surgery	51	36
Early cases	11	7.8
Extrinsic carcinoma	80	57
Intrinsic carcinoma	60	43

our cases had enlarged cervical nodes; many of our cases were recurrent following surgery.

Thirty-six per cent that were sent to us for therapy had no obvious enlarged glands but in most of them the tumor was an advanced laryngo-pharyngeal carcinoma. Forty-four per cent of the total group had enlarged neck nodes or other evidence of metastasis when first seen, or the tumor was recurrent. A rather difficult task was attempted when we tried to categorize these tumors into 57 per cent extrinsic and 43 per cent intrinsic. The obvious point is that the cases referred were largely advanced cases beyond the criteria of surgical help. In a few instances the case had refused surgery.

Obviously over the years the surgeons with whom we have worked have depended on their surgical ability rather than on radiation to control early Stage I or II carcinoma of the larynx. Out of the total of 140 cases of all stages referred to us only 11, 7.8 per cent, were early cases referred for radiation management. This group showed involvement of one or both cords with no fixation or slight fixation. This group of early cases was referred to us because of the anticipated hazard of radical surgery, perhaps because of the patient's age, or because surgery was refused by the patient. Our results in the cases that we have classified as confined to the larynx was 25 per cent five year survival, while the extrinsic group showed only 11 per cent survival. If surgery was done in the form of hemilaryngectomy, complete laryngectomy, or laryngo-fissure and X-ray was used following, we get a five year survival of 32 per cent. Our total five year survival of all the 140 cases was 17 per cent.

TABLE II

FIVE YEAR SURVIVAL OF CASES TREATED BY RADIATION AT UNIVERSITY OF KANSAS MEDICAL CENTER

Type of Case	*Number*	*Per Cent Five Year Survival*
All cases	140	17
Extrinsic	80	11
Intrinsic	60	25
Early cases, radiation only	11	73
Laryngo-fissure followed by radiation	11	25
Laryngectomy followed by radiation	26	35
Total cases treated by definitive surgery followed by radiation	37	32

The results of roentgen therapy are prejudiced by the fact that lesions are often advanced and considered unsuitable for surgery. It is a common practice to include in this group other so called extrinsic lesions, many of which are actually laryngo-pharyngeal carcinomas. In this group are the hypo-pharyngeal carcinomas which are not radiosensitive that often should be treated by laryngectomy rather than radiation. Of the large number of cases with glands when first seen by the radiologist only six lived more than one year.

CASE REPORT

E. H. Male White Age 57.

This patient was seen by us on September 8, 1952.

Chief complaint—Hoarseness for three months, difficulty in breathing.

Emergency tracheotomy was done on September 5, 1952.

Physical examination—"The hypo-pharynx, pharynx, epiglottis and larynx are involved in a neoplastic process. There are firm bilateral cervical nodes."

Pathology—"Squamous cell carcinoma."

Radiation—During September and October, 1952 a depth dose of 4,800 r. was given to the mid-pharynx and larynx. This case was followed until date of death, October 1, 1956. Death was due to a car accident. There was no obvious tumor at the time of death. Survival was four years.

CASE REPORT

F. M. Male White Age 60.

This case was seen by us on September 24, 1953.

Chief complaint—Hoarseness eight months.

Physical examination—"Tumor on left vocal cord mid and slightly anterior but not to the anterior commissure." Biopsy was taken.

Pathology—"Laryngitis with epithelial proliferation."

Patient was re-admitted on November 27, 1953. Physical examination findings were the same. Biopsy was again taken.

Path report—"Squamous cell carcinoma of vocal cord."

Laryngectomy was advised but was refused by the patient. He was referred for radiation therapy. During November and December, 1953 the larynx was treated with radiation using 250 kv. 5,000 r. depth dose was given. Last report November, 1959, no recurrence. This is a six year survival.

This case is cited as the Stage I case that should and did respond to radiation therapy.

Experience of Others With Radiation Therapy

It is always difficult to analyze a series of cancer cases reported by others. It is difficult to determine the progress of the disease. Wang[8] reported 150 advanced cases that he called laryngo-pharyngo carcinomas. We suspect that they correspond closely to the majority of our advanced cases. He reported 18 per cent five year survival following radiation. Murphy[5] from his own and world literature experience indicates that Stage I should show a five year survival of 80 per cent, Stage II 50 per cent, Stage III ten per cent to 15 per cent, and Stage IV less than ten per cent when treated with radiation. In the small true cord lesion he would expect 80 per cent to 90 per cent five year survival following adequate radiation therapy. Blady[1] reported in 1949 a series of cases of 3,158 treated in the United States by various individuals. This included 527 intrinsic carcinomas treated with X-ray therapy with 50 per cent survival, 627 cases of extrinsic carcinoma showing 21.2 per cent five year survival. Harris,[4] *et al.* reported five year survival after radiation therapy of 56 per cent in a series of 28 cases operable by laryngectomy. In a recent symposium in which the author participated Dr. William Hemenway[3] and Dr. Sam Roberts[6] both expressed themselves without quoting statistics as being favorable to radiation therapy in preference to surgery for the early carcinoma of the larynx.

CASE REPORT

R. K. Male White Age 45.

This patient was seen by us on March 3, 1953.

Chief complaint—Hoarseness for six months.

Physical examination—Laryngoscopic examination was reported as follows: "A gray mass was noted covering the true and false cords bilaterally in the right aryepiglottic fold. The lesion was friable and bled easily. The puriform sinuses were free from disease." Biopsy was taken.

Pathology—"Squamous cell carcinoma of the larynx."

On June 1, 1953 the patient was admitted for laryngectomy. Incision for a laryngectomy was made cutting through the tissue overlying the thyroid cartilage. Tissue was removed that was reported squamous cell carcinoma by frozen section. Lymph node chain was felt growing inferior to the laryngeal mass. The surgeon reported as follows: "Because of extrinsic nature of the carcinoma and because of the apparently involved lymph node chain going beyond the area which could be resected on the right as well as probable involvement on the left, it was felt that this was inoperable." Surgery was terminated without doing a laryngectomy.

Pathology—"Squamous cell carcinoma involving the anterior aspect of the neck."

Radiation therapy—5,000 r. of radiation therapy was given during June and July, 1953. The patient was alive without symptoms on February 2, 1960; a seven year survival.

Conclusion

1—Cancer of the larynx when advanced offers an extremely poor prognosis when treated by either radiation or surgery.

2—Early cancer of the larynx, Stage I, may be cured in a high percentage of cases when treated by X-ray. Surgery may accomplish the same result but radiation leaves the patient with a relatively normal voice. Surgery if radical removes the larynx and the voice; if not radical but if the procedure is a laryngofissure or a hemilaryngectomy the patient is left with a hoarse voice.

3—It would seem logical when we are campaigning for routine pelvic examinations to pick up early cancer of the cervix, routine prostatic examination for the middle aged male, and chest examination for smokers, that we should recognize the value of routine inspection of the larynx by a competent laryngologist. It is a simple procedure, done rather quickly, that may detect an early carcinoma which can be cured.

Department of Radiology
University of Kansas Medical Center
Kansas City 12, Kansas

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Thoracentesis Techniques

Simple and Efficient Methods Using Easily Available Materials

ALFRED M. TOCKER, M.D.; LILIA M. RODRIGUEZ, M.D., *and* L. A. O'DONNELL, SR., M.D., *Wichita*

The common use of a rigid set-up for thoracentesis, particularly with sharp needles, is condemned. Complications, in particular pneumothorax, are less likely to occur with simple, safe and efficient methods of aspirating pleural effusions with equipment available in every hospital. The importance of sending *all* aspirated fluid to the pathologist is stressed.

It has been our observation that most hospitals continue to utilize a rigid thoracentesis set-up consisting of a needle, a three-way stopcock and a large syringe *(Figure 1 "A")*. All too often the thoracentesis needles are not blunted, and manipulations during thoracentesis produce trauma (lung punctures and lacerations) with resulting pneumothorax. It is almost impossible, at times, to aspirate fluid into and empty the syringe without continually advancing or withdrawing the needle for short distances. Respiratory movements of the chest contribute further to these difficulties. Due to the compressibility of the soft tissues and mobility of the skin, movement of the needle occurs in spite of the practice of applying a hemostat to the needle at the skin surface. Contact of the end of the needle with the pleural fluid pool is often lost. The multiple connections are continuously coming loose, permitting air to be aspirated into the pleural space.

From the Departments of Surgery and Medicine of St. Francis Hospital and the Department of Medicine of St. Joseph Hospital, Wichita.

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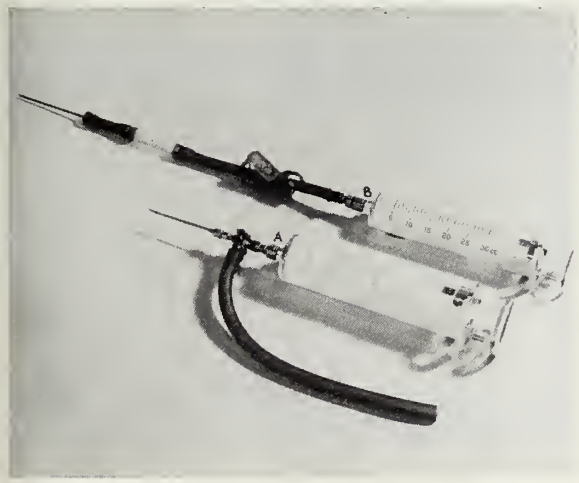

Figure 1. (A. Lower syringe set-up) Unsatisfactory rigid thoracentesis set-up with sharp needle and multiple connections which frequently became disconnected during the procedure. (B) A more satisfactory thoracentesis set-up. The rubber tubing allows mobility without movement of the blunted needle. The glass adapter allows visualization of the fluid being aspirated. A 3-way stopcock may be substituted for the clamp, thus making it unnecessary to disconnect the Luer-Lock Syringe. All the parts are firmly connected and cannot come apart during thoracentesis.

Blunting of the thoracentesis needle and addition of flexible tubing *(Figure 1 "B")* to permit greater mobility of the aspirating system eliminate most of these objectionable features. This type of set-up is used when one expects to aspirate only small amounts of fluid.

For some time one of us (LAO) has utilized a blood donor set *(Figure 2)* ordinarily available in hospitals, for thoracentesis of larger amounts of pleural fluid. Such donor sets consist of a sealed vacuum bottle (such as the Baxter Plasma Vac or anticoagulant-containing Transfuso Vac bottles) and plastic tubing with needles on both ends. One needle should be blunted to minimize the possibility of puncturing the lung.

After localization of the site of the pleural fluid collection by postero-anterior and lateral chest x-rays and percussion, the skin is cleansed and prepped with an antiseptic solution, and the selected area infiltrated with a local anesthetic (one per cent procaine or xylocaine). A small needle (No. 23 to No. 25) is used to produce the initial skin wheal and a larger, longer needle (No. 20) is used to infiltrate the deeper tissues. As one slides the needle over the upper

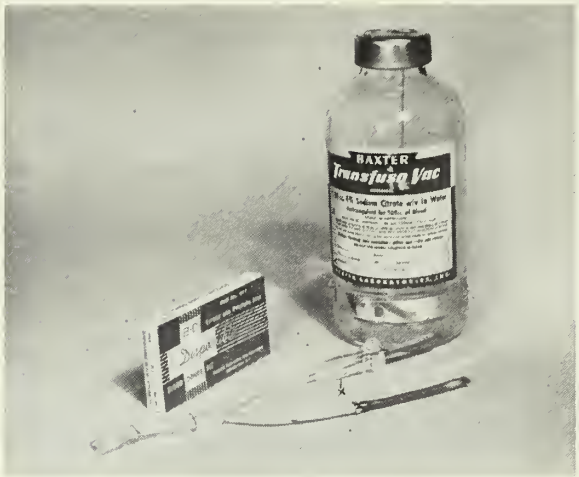

Figure 2. Sterile donor set recommended for thoracentesis consists of vacuum bottle and plastic tubing with needles on both ends, one of which should be blunted. A plastic clamp (X) is provided for clamping the tubing to preserve the vacuum in the bottle during the first steps in performing the thoracentesis. The Baxter Plasma Vac bottle contains no anticoagulant. The above pictured Baxter Transfuso Vac bottle contains anticoagulant and should be used when the aspirated pleural fluid coagulates upon removal from the pleural space.

edge of a rib, the distance to the pleural space can be estimated. As soon as pleural fluid is aspirated, the depth and direction of the needle are noted. The thoracentesis set-up is not used unless fluid is freely aspirated through the anesthetic needle. Prior to insertion of the needle into the sealed vacuum bottle, the plastic tubing is clamped to preserve the vacuum. A plastic clamp *(Figure 2 "X")* is provided in the donor set-ups for this purpose. The sharp needle on one end of the clamped tubing is introduced into the vacuum bottle. The blunt needle at the other end of the tubing is introduced into the pleural space in the direction previously determined by the anesthetising needle. Puncture of the skin with a No. 11 blade is usually desirable. When the end of this needle is securely under the skin, the clamp on the tubing may be released. The needle is then advanced until the pleural fluid is reached as evidenced by the flow through the tubing into the vacuum bottle. The collected fluid (up to 500 cc) is sterile and ready to be sent to the laboratory for bacteriological and other studies.

If more than 500 cc is to be aspirated, the set-up illustrated in *Figure 3* is used. After the bottle is filled, we introduce a large sterile needle (preferably with a short length of sterile rubber tubing attached) into the glass tubing of the bottle by piercing the rubber stopper. This is connected to the tubing of any continuous suction machine such as is available in all hospitals. The attachment of such apparatus permits continuous low vacuum-suction from the pleural space into the sterile vacuum bottle and then out into the collection bottle of the suction machine. The latter bottle and tubing need not be sterile. The fluid remaining in the sterile vacuum bottle is more than enough for bacteriological studies, after which the remaining sterile fluid and the fluid in the collection bottle of the suction machine may be combined for other studies. It is a common complaint among pathologists that they do not receive *all* the fluid aspirated by thoracentesis for study of the sediment for cellular morphology.

The sterile vacuum bottle may be eliminated by using apparatus illustrated in *Figure 1 "B."* After aspiration of approximately 15 cc of the pleural fluid into a sterile syringe, this tubing is attached directly to the tubing of a low-vacuum suction machine and the remaining fluid collected entirely in

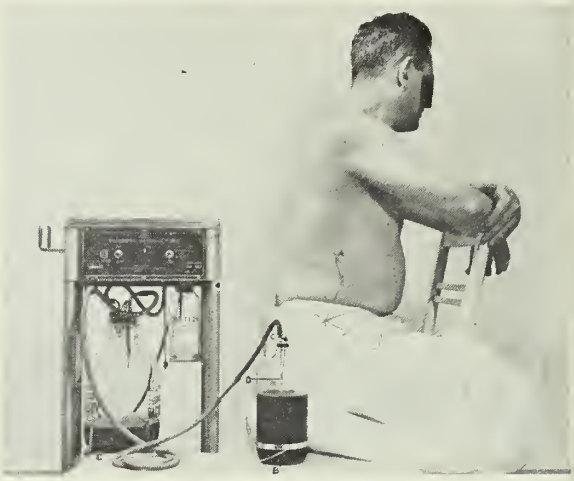

Figure 3. The blunt needle (A) of the donor set has been used as a thoracentesis needle. After 500 cc has been aspirated into the sterile donor set-up vacuum bottle (B), the remaining pleural fluid is aspirated by inserting a needle (C) attached to the rubber tubing of the suction machine through the rubber stopper of the vacuum bottle into the glass tubing (D). The set-up beyond this needle need not be sterile. The pleural fluid is then aspirated first into the already filled sterile bottle of the donor set and then through the attached tubing into the bottle of the suction machine (E). The sterile solution in the first bottle is used for bacteriological study. The remaining fluid in this bottle and the fluid in the unsterile bottle of the suction machine may be used for other studies, including study of sediment for cell morphology.

the unsterile bottle of the suction machine. It is important not to apply too strong suction to such a set-up. The sterile fluid initially aspirated into the syringe, divided into two or three portions to assure against loss of the entire specimen by spillage, breakage, etc. suffices for bacteriological studies.

Professional Arts Bldg.
2110 East Douglas Avenue
Wichita 14, Kansas

Adult Psychiatric Clinics

Outpatient Service in a Mental Hospital Setting—An Economic Viewpoint

M. R. GAITONDE, M.D., ***Osawatomie***

THE NEED FOR MORE PSYCHIATRIC outpatient clinics is increasingly felt all over the country.[1] Some of these clinics are designed to take care of the problems of patients who, though not so severely disturbed as to require hospitalization, experience considerable discomfort to operate optimally in the community. Most of these clinics are established in the community, and only a few operate in a state hospital.[2] It is, therefore, pertinent to investigate the usefulness of a psychiatric outpatient clinic in a state hospital setting. This is a multifaceted question, and the present study concerns itself with exploring this problem from the financial standpoint.

Structure of the Clinic

The adult outpatient psychiatric clinic at the Osawatomie State Hospital was started in September 1954. The clinic is situated on the hospital grounds and serves 22 counties in the southeastern part of the State of Kansas with an approximate population of 726,800. Since the clinic is not centrally situated in this hospital area, at times the patients must travel a distance between 150 to 200 miles to reach the clinic. The working hours of the clinic were from 8:00 a.m. to 5:00 p.m. Monday through Friday and on Saturday from 8:00 a.m. until noon. This study was conducted on patients who came to the clinic between July 1, 1957, and June 30, 1958. During this period, the clinic had one full-time psychiatrist and another who was half-time until November 1 and later worked on a full-time basis. There was one full-time social worker, one full-time secretary, and a part-time psychologist. The clinic receives its patients from the local physicians, social welfare departments, courts, and the Admissions Committee of the Osawatomie State Hospital. The clinic functions as an integral part of the hospital, and the clinic staff participates in the educational and teaching program of the hospital.

The clinic primarily takes care of a rural population with low income. The patients are usually seen on once a week basis, and they return to their homes after their visits at the clinic. A patient at the clinic passes through three phases; namely, an intake interview, a series of evaluation interviews, and finally psychotherapeutic sessions when he is accepted for treatment. The psychotherapeutic approach is mainly at the supportive level because of the limited psychological mindedness of the patients. A patient is charged a fee at the clinic on a sliding scale which takes into account the patient's income, the number of dependents, his debts, if any, and the expenses that he would incur as a result of transportation to and from the clinic. Some patients pay no fees or as low as .25, and others pay as high as $10 for every visit. In case the patient's relative is also seen at the clinic for casework, then he is charged the same amount as the patient. On an average the patient pays a fee of $2 to $3 for every visit.

Findings and Discussions

Between July 1, 1957, to June 30, 1958, a total of 223 patients were treated at the clinic, and their ages varied from 16 to 64. (Forty-three patients below the age of 16 were seen in the outpatient clinic but have not been included in the study since Osawatomie State Hospital admits as inpatients persons over the age of 16, and hence we cannot have comparable figures.) Some of these patients had only one visit to the clinic while others had numerous visits as high as 70 during this year. On an average a patient visited about six times during their treatment at the clinic. The total number of hours given to these patients during the course of the year was 1,253.

At the Osawatomie State Hospital it has been found that the average stay of a patient is approximately 90 days and that the state spends about $4.75 per day per patient.[3] Therefore, it will be seen that the State of Kansas would have paid $95,332.50 for caring for 223 inpatients for approximately 90 days of hospitalization. Up until March 1, 1958, patients were charged $12 per week for their hospitalization, and since then, the charge has been increased to $28 per week. It is found that the hospital was able to recover 65 per cent of the fees charged to these inpatients.

The State of Kansas paid a total of $22,793 for the maintenance of the Outpatient Clinic during the period under review. A total of $2,437.17 was charged to the 223 outpatients as fees of which a sum of $2,357.00 was recovered which constitutes 96.7 per cent of the amount charged. At the out-

Doctor Gaitonde is director of the Adult Outpatient Psychiatric Clinic at the Osawatomie State Hospital.

patient clinic the patient's fee is used as a therapeutic device to bring to the notice of the patient his attitude towards money, his social responsibility, and his feelings towards treatment.

Of the 223 patients, 55 were housewives and 16 were students. These occupations though not wage earning occupy an important place in the social organization. The occupations of the rest varied from farmers, welders, meat cutters, teachers, etc. Since these patients were not hospitalized, they were able to pursue their jobs in the community and earn substantially. It should be noted that in addition to serving as useful members of the community these individuals by virtue of the various taxes to the local and federal government were contributing to the community welfare which does not occur with the patients who are hospitalized. The above findings are shown in the following table.

COST OF 223 PATIENTS

	As Inpatients	*As Outpatients*
A. State of Kansas Spent	$95,332.50	$22,793.00
B. Fees Charged	50,840.00	2,437.17
C. Fees Recovered	33,046.00	2,357.00
D. Net Sum Spent by the State (A minus C)	62,286.50	20,436.00

Psychotherapeutic assistance at an outpatient level is the treatment of choice in certain psychiatric disorders. In the absence of this facility these patients would either stay in the community undergoing a progressive deterioration or be hospitalized which brings in its wake problems of an adjustment to the hospital setting initially and at a later date readjustment to the community after discharge from the hospital.

In conclusion it may be stated that treatment of the sick is one of the functions of society which far from being profit making is not even self-supporting; however, from a practical standpoint society is interested in investing its resources in an area which is likely to give substantial dividends. The above study is an attempt to shed light in this area.

Osawatomie State Hospital
Osawatomie, Kansas

The writer wishes to thank Mr. John Harris, social worker, and Mrs. Dorothy Landry, secretary of the clinic, for their assistance in this study.

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Growth and Death Everyday's Job

Aging is a "dual" process characterized as much by "growth, development, and maturing" as by "deterioration and decline," Dr. Edward L. Bortz, President-Elect of the American Geriatrics Society, said in a talk at the Society's annual meeting.

If, within us, each day a part of us dies, there is also a rebuilding, recharging mechanism at work. There is a definite progresssion, the essence of living, of growth, development, and recession in every tissue.

This "dual nature" of aging is all too often ignored, resulting in a "huge human waste," he said. The emphasis on decline of the individual from atrophy, degeneration and disuse and their social consequences is the underlying basis for the vast amount of deterioration of many elderly citizens.

The need to promote methods of keeping older people in "good health and active participation in the work-a-day world" is underscored by the vast, and continuing increase in our aging population. In the United States, while the population has doubled in the past half century, there has been a four-fold increase in the over 60 age group. Thus, the largest portion of medical practice, now and in the future, will be concerned with the health and fitness of our aging population.

In scientific studies now underway, diet and exercise have emerged as key factors in prolonging life and maintaining health. It has been shown, for instance, that animals on an adequate dietary and exercise regimen kept their "alertness and potency" twice as long as those which were not.

However, while much is now known about how to stay healthy, this knowledge is not being communicated to the general public. In fact, high importance is placed on more services for more sick people and no mention is made of the possibility of reducing the vast amount of avoidable illness

Sudden Knee and Abdominal Pain, Dyspnea, Nausea, and Collapse Occurring in an Obese Aerial Photographer

Case Presentation

A 32-YEAR-OLD WHITE MAN was admitted to KUMC at 4:00 p.m. on November 26, 1958, complaining of pain in the left knee, abdominal pain, and dyspnea of seven hours duration. He died at 8:30 p.m.

Before admission he had apparently been in good general health except for obesity. On the day of admission, while flying in an aircraft at an altitude of 33,000 feet, he had sudden onset of pain in his left knee followed by lower and mid-abdominal pain, shortness of breath, nausea, and weakness which persisted throughout the remainder of the flight. About three hours after the onset of symptoms he was removed from the aircraft in a state of collapse. After a short period at an infirmary he was transferred to this hospital.

He denied any previous history of similar attacks. His past history and family history were not obtained because of the severity of his illness.

The patient was an acutely ill, obese, white man who responded to questions but was dyspneic and restless. His blood pressure was unobtainable; pulse, 130 and regular; respiration, 32 to 34 per minute. His skin was cool and somewhat mottled over the abdomen and arms. Moist rales with prolonged expiration and wheezes were heard in all lung fields. The heart tones were muffled and obscured by the rapid respiration. The second pulmonic sound was not accentuated. The abdomen was obese. There was slight lower abdominal rebound tenderness. Bowel sounds were quiet, and no masses or organs were palpable. The nail beds were cyanotic, and there was a dusky color to the skin.

On admission he was treated with vasopressors. The resultant rise in blood pressure was sustained for about one and one-half hours, but then gradually declined. He was given intravenous hydrocortisone, atropine, papavarine, deslanoside, aminophyllin, morphine, and positive pressure oxygen by mask, but his condition steadily became worse, progressing to ventricular fibrillation and death in spite of cardiac massage.

Dr. Mahlon Delp (moderator): Are there any questions?

Dr. Max Allen (internist): Had the patient ever before flown at that high altitude?

Dr. Frank Brosius (fellow, cardiovascular department):* Yes. He was a photographer on flying status and had flown quite frequently.

Dr. Allen: Had he previously ever had any symptoms while flying?

Dr. Brosius: No.

Frank Chesky (fourth year medical student):† Did he have any chest pain while he was in the air or immediately afterward?

Dr. Brosius: There is no description of chest pain *per se.*

Dr. Harold Lowe (intern): Was his cabin altitude 33,000 feet or was his plane pressurized?

Dr. Brosius: The aircraft was not pressurized. It had taken off from a point near the eastern seaboard and gradually rose to a height of 33,000 feet. The patient's difficulty began approximately two hours after takeoff.

Dr. Lowe: Did the aircraft remain at that high altitude, or did it drop after the onset of his symptoms?

Dr. Delp: The plane dropped in altitude after he began to have difficulty.

Herbert Curran (student): What were the neurological findings on admission?

Edited by Jesse D. Rising, M.D. and Mahlon Delp, M.D. from recordings of the proceedings of the conference participated in by the departments of medicine, pediatrics, surgery, radiology and pathology of the University of Kansas Medical Center as well as by the third and fourth year classes of students.

* Although a fellow in the cardiovascular department at the time of this conference in April, 1959, he completed his fellowship in June, 1960.

† Although a student at the time of this conference in April, 1959, he, like the others referred to as students, received the M.D. degree in June, 1959.

Dr. Brosius: Only a cursory neurological examination was done because of the patient's extreme situation. The deep tendon reflexes were rather sluggish, and there was no nuchal rigidity.

Ivan Carper (student): Did he receive any fluids while in the hospital?

Dr. Brosius: He was given glucose.

Mr. Carper: How fast was it given?

Dr. Brosius: It was given rapidly enough to maintain his pressure around 100 systolic for the first two hours; thereafter it was given more rapidly, but I do not know exactly how fast.

Dr. Delp: May we see the electrocardiogram now, please.

Josephine Anderson (student): The only electrocardiogram *(Figure 1)* was taken on the day of admission which was also the day of death. There is a rate of 120 and a normal sinus rhythm. There is right axis deviation of plus 150 degrees. P waves are prominent in leads II and aVf and there are deep S waves in lead I, aVl, and across the chest. There are right ventricular complexes across the chest leads and down to V_5 and V_6. I interpret this tracing as compatible with acute cor pulmonale.

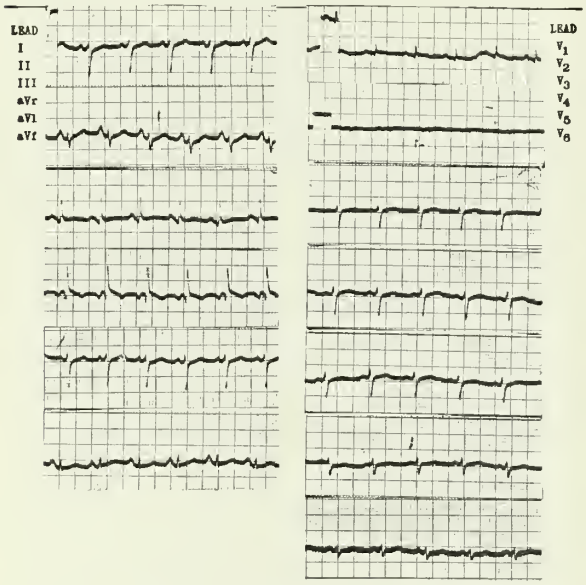

Figure 1. Electrocardiogram taken on admission.

Dr. Delp: Thank you. May we have your differential diagnosis, Dr. Crockett?

Differential Diagnosis

Dr. James Crockett (cardiologist): I do not believe that there were right ventricular complexes across the precordium because an R wave in V_4, V_5 and V_6 cannot be considered to be a right ventricular complex. I completely agree, however, that the tracing is compatible with a diagnosis of acute cor pulmonale. The patient was in a critical state on admission. He was short of breath, his abdomen was distended, and he complained of severe epigastric discomfort. The history of pain in his knees was not obtained until shortly after admission. He had been in the air for about five or six hours, and at least half of that time he had flown at an altitude of 33,000 feet. He had a trunkal type of obesity and an extremely large abdomen and chest.

Acute myocardial infarction must be considered as a possible diagnosis when a patient with these characteristics presents with a history of epigastric pain. There are numerous instances in which acute myocardial infarction has occurred in obese individuals of this age group, so that diagnosis certainly could not be ruled out. Although he did not complain of chest pain he had epigastric discomfort which, of course, is consistent with an infarction. The electrocardiogram in no way suggested acute myocardial infarction, but we continued to accept that diagnosis for about one hour after admission. Acute pulmonary embolism and pulmonary infarction were also considered seriously, and the admission electrocardiogram was compatible with that diagnosis.

Spontaneous pneumothorax is a possibility when there is a sudden onset of shortness of breath and collapse. It is unlikely here, however, because the physical findings were not consistent with that disease.

A ruptured viscus must be considered when symptoms of abdominal distention and epigastric pain are present and associated with a history of flying at a high altitude; but, again, that is not a likely diagnosis here.

Within the first hour after admission the history was obtained that the patient, while flying, had experienced pain in the knee and abdominal pain, and our attention was directed to the consideration of decompression sickness, a syndrome in which the ambient pressure is decreased with a characteristic set of events. Decompression sickness is a well-recognized entity with which we are all somewhat familiar, but it is usually considered in terms of the diver who, after being subjected to a high pressure, has returned to sea level pressure too rapidly. A similar situation occurs, however if an individual ascends to a high level and remains there for a length of time. In that case, the ambient pressure is decreased, and the stage is set for possible decompression sickness. The critical level for the average individual is an altitude of about 30,000 feet, but it may vary with the patient's age, body structure, the length of time he remains at that elevation, and the administration of oxygen. The first symptom of decompression sickness in an extremely obese individual who is flown too high in an unpressurized aircraft is often pain in one of the joints, and this is the typical "bends." This is often followed by abdominal pain which is the result of the expansion of gases within the hollow viscera of the abdominal cavity. More serious symptoms of res-

piratory distress, commonly known as "chokes," may occur in which the patient has great difficulty in breathing and a burning sensation in his chest. The mottling of the skin over the various parts of the body, a sign of a severe degree of decompression sickness, occurs more often in obese individuals with increased mottling over the fatty areas of the body. This is apparently the result of spasm of the small arteriole supply to the skin and becomes more marked until death. Patients with severe "chokes" and mottling of the skin usually develop a severe degree of peripheral vascular collapse which is often extremely difficult to combat, as in our particular patient. His blood pressure was low on admission, and he responded only briefly to pressor agents. His condition steadily became worse, and he failed to respond to any form of therapy. The possibility of giving an intra-arterial infusion of blood was considered just before his death, but I seriously doubt that he would have benefited from it. Reported studies of this type of illness indicate that the shock which results is difficult to combat, and there have been few instances of success. Cardiac massage was instituted in the belief that there might be a sufficient chance that the ventricular fibrillation could be terminated and a satisfactory rhythm started; but it was not successful.

Dr. Delp: Thank you. May we have your comments, Dr. Reissmann?

Dr. Kurt R. Reissmann (internist): At an altitude of 18,000 feet the barometric pressure is one-half that of sea level, and at an altitude of 33,000 feet it is one-fourth that of sea level. Since the volume of gas is inversely proportional to the barometric pressure, the gas that is present in the body cavities expands by a factor of four at an altitude of 33,000 feet, and this gives rise to some discomfort and often leads to more serious trouble. Several cases of myocardial infarction reported at relatively low altitudes were probably due to some reflex mechanism of the expansion of the gas in the intestines. Far more serious complications, however, are related to the gas that is in physical solution. As an example, when blood plasma is exposed to air, nitrogen, and oxygen will diffuse into the plasma and become dissolved. When the gas is in physical solution it is present there in truly molecular dispersion and, as such, has lost some of the characteristics of a gas. The usual blood level is about 3 ml. of nitrogen in 100 ml. of blood plasma, the amount being dependent upon the coefficient of solubility, which means the amount of the gas in the solution is directly proportional to the partial pressure, or, in other words, it is directly proportional to the barometric pressure. Therefore, when plasma containing 3 ml. of nitrogen in 100 ml. of plasma is taken to an altitude of 18,000 feet one-half of the nitrogen must escape because at that altitude the barometric pressure is only one-half that of ground level. Consequently, only one-half of the amount of nitrogen can stay in solution and 1.5 ml. will be released in the form of bubbles. That, of course, is the principle of soda pop with which you are all familiar. Adipose tissue contains considerably more nitrogen than the blood plasma because the solubility of nitrogen in fat is greater, and fat tissues contain at least three times more nitrogen than blood plasma. We carry around in our bodies about 1,500 ml. of nitrogen dissolved in body tissues and blood plasma. In the obese person the amount is much greater and can go as high as 3,000 ml. When one ascends in altitude it is clear that some of the nitrogen must escape because at 18,000 feet only 750 ml. can be accommodated in physical solution, and, therefore, 750 ml. must be released. This can be accomplished without difficulty if one ascends slowly because the nitrogen diffuses from the tissues into the blood plasma which is carried to the lungs and exhaled. Obese individuals may encounter difficulties, however, because the fat tissue is not well supplied with blood vessels, and there is a great amount of nitrogen in the fat itself. As a consequence this transport may not work too well. In obese persons bubbles form, especially in the fat tissues. The bubbles are caught in the capillaries of the lungs to produce what is usually called "chokes." A rupture of many fat cells may also occur. The gas bubble formed in the fat cell expands with increasing altitude until the membrane simply breaks and the fat and nitrogen are released, the nitrogen in the blood stream producing the picture of air embolism.

Decompression sickness can be prevented by flying in compressed cabins in which the air from the outside is pumped into an airtight cabin by a compressor to maintain the pressure inside the cabin close to that of sea level. This is usually kept at 8,000 to 10,000 feet. One precaution that can be taken in an unpressurized cabin is the pre-breathing of oxygen. Although decompression sickness is not associated with hypoxia, breathing oxygen before an ascent to high altitudes greatly helps to prevent air and fat embolism. Nitrogen in the alveolar air becomes dilute when 100 per cent oxygen is breathed, and in that way we are able to get rid of most of the nitrogen from our body at sea level.

Up to the present time the decompression sickness has primarily been a problem of military aviation, but this has been changed with the advent of jet aircraft. The cruising altitude of the modern jet airliner is between 30,000 and 40,000 feet, and, of course, the cabin is pressurized. There is always the possibility, however, of failure of the compressor or of a blowout of a window or a duct. That situation occasionally occurs in pressurized cabins, and under those circumstances the pressure inside the cabin rapidly falls to a pressure usually found at 33,000 feet. This is a matter of great concern to the Federal Aviation Agency, and, consequently, several precautions have been

taken, one of which is to provide oxygen masks over the seats of all passengers. Whenever the cabin pressure goes down the masks automatically drop in front of the faces of the passengers to provide oxygen. Although this prevents hypoxia it does not prevent decompression sickness. One of the specifications of commercial jet aircraft, therefore, is that the jet must be able to descend within two minutes from an altitude of 40,000 feet to an altitude of 10,000 feet, and, although that is quite a dive, all of the commercial and jet airliners fulfill this requirement. If an accident occurs and a window blows out, the pilot almost automatically puts the plane into a dive and reaches a safe altitude within a minute or two.

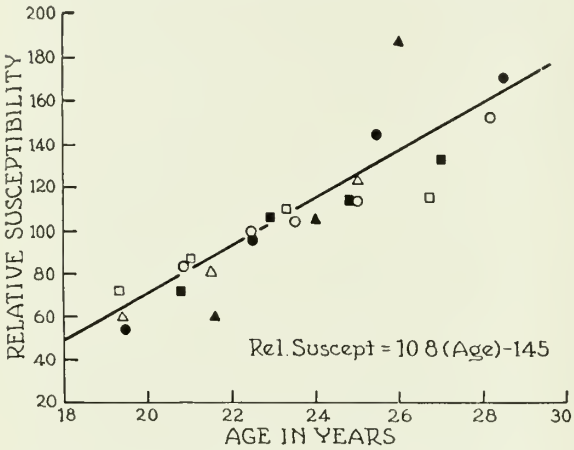

Figure 2. The graph illustrates the relative susceptibility of individuals to decompression sickness as a function of age. Note the striking rise in the curve even in the relatively short span from 18 to 30 years. (Courtesy of J. S. Gray, Ph.D.; J. F. Fulton, M.D., Ph.D.; and W. B. Saunders Co.)

Dr. Delp: Thank you, Dr. Reissmann. May we have the pathologist's report now, please?

Pathological Report

Dr. James B. Caulfield (pathologist): As is frequently the case in this disease entity of civilization few morbid anatomical findings were evident. The changes were mostly those which accompany shock. A striking degree of pulmonary edema was present (the lungs weighed 1,360 gm.), and 600 mm. of straw-colored fluid was present in the right pleural space. In addition, the brain exhibited edema and weighed 1,500 gm.

Other significant findings were the obesity, *i.e.*, a body weight of 240 pounds with a height of 65 inches.

The clinical history almost assuredly confirms the diagnosis of decompression sickness, and the pathologic findings lend support to that diagnosis.

The mechanism of death in decompression sickness is believed to be due to the accumulation of nitrogen in bubble form in the vascular tree with "air emboli" to vital structures initiating death. Haymaker[4] believed that fat released from fat depots because of the enlargement of nitrogen bubbles within cells which then rupture is instrumental in causing fat emboli which also contribute to death. Neither air nor fat emboli were documented at autopsy in this case.

It has been nicely demonstrated that two predisposing factors are important in decompression sickness; our patient exhibited both. Finally, Gray[3] has shown that age is a factor in caisson disease, and this is illustrated in *Figure 2.* A similar relation is evident between obesity and relative susceptibility as seen in *Figure 3.*

In conclusion, I believe that an obese individual was subjected to low pressure and consequently developed air embolism. Because a recompression chamber was not readily available, the proper emergency therapy of rapid recompression to remove intravascular nitrogen could not be instituted. I should like to add that the literature stresses this latter point: with the development of air embolism the usual measures for combating shock such as whole blood, oxygen and vasopressors are not efficacious. Rapid recompression is essential.

Dr. Delp: This case clearly presents the classical findings of decompression sickness which is a branch of modern medicine even though this entity has been recognized for a long time. I am glad that Dr. Reissmann emphasized the flying potential for this.

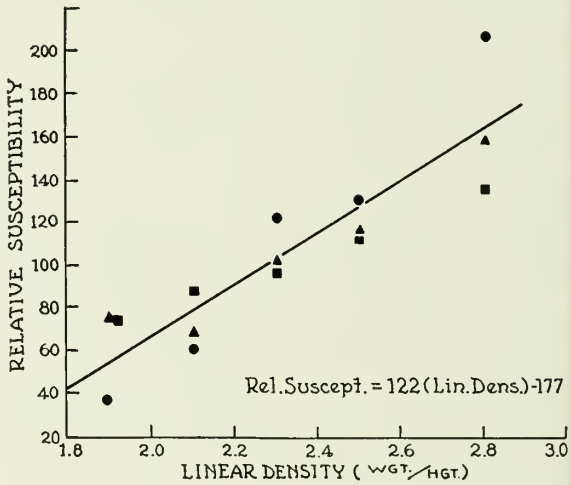

Figure 3. The influence of obesity (with its consequent increase of dissolved nitrogen in body fat), as illustrated by weight to height ratio, on relative susceptibility is seen. As the ratio increases (by increase in body weight in excess to body height) susceptibility increases. (Courtesy of J. S. Gray, Ph.D.; J. F. Fulton, M.D., Ph.D.; and W. B. Saunders Co.)

Pathological Anatomical Diagnosis

Obesity, height: 5′5″, weight: 235 pounds.

Dilatation of both cavities of the heart, mainly in the right side.

Acute passive congestion and edema of the lungs, liver, spleen, and kidneys.

Right hydrothorax.

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New Cancer Cure Device

A new device that promises to be highly effective as part of the treatment of certain cancers and massive infections is being tested at leading hospitals and medical centers throughout the United States. The "Perfuso-Pac," developed by Baxter Laboratories, permits localized treatment with huge doses of medications that previously have not been used in such quantity because of fear of damage to vital organs if such medicine were allowed into the general blood circulation.

The unit is undergoing clinical testing. It will take some time to evaluate the results obtained with the help of the device.

The "Perfuso-Pac" serves as a small "heart-lung" for the portion of the body undergoing treatment. The technique, called regional perfusion, prevents deadly cancer-fighting agents from reaching critical areas of the body, including the central nervous system.

For example if there is a cancerous growth in a leg, the "Perfuso-Pac" might be used. The blood supply to the limb would be blocked off temporarily by a tourniquet or other mechanical means. The device would then circulate both blood and the specific anti-cancer drug to the leg.

Cancers have an affinity for certain drugs and most of the anti-cancer agent would be concentrated in the growth through circulation of the blood. Doses of the drug—up to 100 times the amount which could be administered safely by previous methods—then can go to work directly on the growth.

When the treatment is completed, the tourniquet is removed, and the patient's heart and lungs can take over their normal job of circulating freshened blood to the leg with no ill effects to vital organs.

A spokesman for the company emphasized that the regional perfusion technique has just reached the testing stage and no concrete data are available. In theory, however, it will make it possible to at least "retard" the spread of some growths and infections. But only experimental observation can determine if massive doses of drugs will "reverse" the process and affect a cure.

It may be possible to localize the main growth or infection and kill off scattered centers for spreading the disease. This may make it possible to remove the principal growth that would remain, by surgery, and completely rid the affected portion of the cancerous tissue.

Another possibility for the technique would be to clamp off the blood supply of certain diseased organs, that have high resistance to toxic drugs, from the rest of the system and treat the organs through regional perfusion.

The machine works on somewhat the same principle as the large "heart-lungs" that have been developed for heart surgery. The unit is linked to an artery and a vein through plastic tubes, thus setting up a method of circulating and freshening (providing oxygen to) the blood outside of the body.

The unit is mounted on a stand and pumps are attached that simulate the action of the heart. The pumps push fresh blood, carrying the drug, into the artery and the "used blood" returns from a vein to the unit where oxygen bubbles through it to refreshen it.

Most bubbles are broken by a stainless steel sponge-like device and the design of the unit prevents any air bubbles from entering the blood stream. The fresh blood goes back into the artery with more drug added to renew the process. The device pumps about a pint of fresh and drug-loaded blood a minute into the area being treated.

When the treatment is completed, the unit acting as the blood oxygenator, is removed and thrown away.

The agent being used most in tests may be nitrogen mustard or other specific anti-cancer agents under research study, but radio-isotopes and other materials also are being tried.

Student
THESIS

Portal Hypertension With and Without Esophageal Variceal Bleeding and Its Management

STANLEY W. LOWE, M.D., *Salina*

THERE ARE NUMEROUS ETIOLOGIES for portal hypertension which the scope of this paper will allow me only to mention. The intrahepatic class includes portal cirrhosis (Laennec's), cardiac cirrhosis, biliary cirrhosis, post necrotic cirrhosis, and various toxins as carbon tetrachloride, chloroform, etc. The extrahepatic class includes hepatic venous obstruction (Budd-Chiari syndrome), thrombophlebitis of the portal vein, extrinsic masses occluding the portal vein and cavernomatous transformation of the portal vein. That each of these impedes the flow of blood in the portal system before it reaches the inferior vena cava is obviously the common factor which usually results in hypertension within the lesser circulation.

Physicians have been aware of the dire need for specific treatment of portal hypertension and its common sequelae, esophageal varices, and subsequent hemorrhage. In 1877 Eck introduced the idea of shunting the blood from the portal vein to the inferior vena cava. This experiment was done in dogs and the shunt became known as the Eck fistula; even though his results were questionable because of the eight dogs used the one postoperative living animal did not come to necropsy to verify that the shunt remained patent.[7] Subsequent surgical advances include Vidal in 1903 who was first to try the Eck fistula in a human; DeMartel in 1910 and Rosenstein in 1912 constructed side-to-side porta-caval shunts; Blakemore and Lord in 1945 envisioned and constructed a splenorenal end-to-end anastomosis using a vitallium tube; Linton in 1947 devised the splenorenal end-to-side anastomosis and Welch in 1947 introduced the Tom Smith clamp for isolating a small segment of the inferior vena cava which allowed blood to flow during the procedure.

The emergency treatment of esophageal variceal bleeding is twofold in purpose. The actual hemorrhage must be controlled and ammonia intoxication and subsequent coma must be eliminated. The increased blood ammonia is due to bacterial decomposition of the blood elements in the intestine and in cases of the intrahepatic class to a diminution of the ability of the liver to convert the ammonium ion to urea. The esophageal varices have been ligated via transthoracic transesophageal, and transabdominal routes as emergency treatment with varying immediate results; however, the almost uniform end result was recurrent hematemesis within six months after the surgical procedure. Many surgeons feel that if initial control of esophageal variceal hemorrhage can be accomplished by any other means the mortality and morbidity of an emergency procedure should be circumvented; therefore whole blood transfusions, cathartics, antibiotics (preferably neomycin), intravenous injection of arginine or salts of glutamic acid, and the judicious use of the Sengstaken-Blakemore

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A review of 24 patients from the University of Kansas Medical Center and the Kansas City Veterans Administration Hospital.

This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be best by the faculty at the school. Dr. Lowe is now at the Schilling Air Force Base, Salina, Kansas.

tube have been employed. Esophageal tamponade with the Sengstaken-Blakemore tube is not without its definite hazards. Dr. Harold O. Conn reported that out of 50 patients at the Grace New Haven Community Hospital which had this form of tamponade nine patients died as a direct consequence of its use. Obstruction of the airway resulting from regurgitation, and bronchial aspiration of bloody secretions was the most serious complication and claimed eight lives. Occlusion of the airway by the misplaced tube itself accounted for one fatal complication and four major complications in other cases. Pressure necrosis, tears of the esophageal mucosa, and actual rupture of the esophagus were among the complications.[6] When the initial hemorrhage and threat to life has been controlled a definitive decompression of the portal hypertension can be accomplished by one or more of the shunt operations.

Cornell Report

O'Sullivan and Payne reported on nine patients from the New York Cornell Medical Center who had emergency porta-caval anastomoses. Three patients died in the immediate postoperative period, three subsequently died of hepatic failure and three were living and apparently well at the time of the report. To add the formidable morbidity and mortality of an emergency shunt operation to the already precarious pathological physiological state of a variceal hemorrhaging patient does not seem feasible. Therefore, the shunt operation is usually done as an elective procedure after the patient recovers from the initial bout of hematemesis and not within 48 hours as in the above report.

Esophageal varices are one of many collateral channels which form to aid in the decompression of the hypertension in the lesser circulation. It happens that they are of much more interest due to their precarious anatomical location and susceptibility to hemorrhage. The exact reason that they do rupture is obscure; however, many factors probably should be incriminated depending upon the case. Peptic erosion has been championed as the culprit; however, Dr. Irving Brick at Georgetown University School of Medicine esophagoscoped approximately 300 patients with esophageal varices and found only six with peptic esophagitis.[3] Mechanical trauma produced by food and actual hydrodynamic rupture are among other factors which may account for the minority of cases. If the major cause for rupture could be disclosed and a method of prophylaxis were established, the need for "artificial collateral anastomosis" would be non-existent in many cases.

Many types of operations have been devised for portal hypertension. They all carry as a goal to reduce the hypertension in the splanchnic venous circulation to a normal of 20 cm. of H_2O or below.[1] This in turn decompresses the coronary veins and the esophageal veins and decreases the chance for recurrent hematemesis. Omentopexy and hepatic artery ligation have not proved satisfactory and are not currently used. The most important surgical advancements in this area were covered in the second paragraph of this paper.

Etiology

There were 15 patients with portal cirrhosis of which four were female and 11 male. Their average age was 50.5 years and only one patient was colored.

Four patients had postnecrotic cirrhosis and all but one were females. Their average age was 32.8 years. One patient was a colored female.

Cavernomatous transformation of the portal vein was the etiological factor in two patients. Both were males and their ages were six and seven years. The exact reason why the cavernomatous vein occurs is not readily apparent. It may represent a primary malformation or a more recent thought is that it is a recanalized thrombus. Evidence of its existence in *Case No. 1* was confirmed by a splenogram done at the time of the end-to-side splenorenal anastomosis. A reproduction of this venogram is seen in *Figure 1*. It is interesting to note that the portal pressure dropped from 64 to 24 cm. of H_2O after the shunt was accomplished and furthermore that the child has had no further hematemesis with the last follow-up being approximately four years and seven months after the splenorenal anastomosis.

Biliary cirrhosis was found in one 21-year-old female. Splenic vein thrombosis afflicted a 59-year-old white female and the etiology of one case was unknown even after post-mortem examination.

Hematemesis and Emergency Therapy

Nineteen of the 24 patients had at least one bout of hematemesis prior to their shunt operation. Two others had a definite bleeding tendency with tarry stools and three had no bleeding. The average number of times that the 19 patients had frank hematemesis prior to operation was 3.2 times with the greatest number being seven times. The average admission hemoglobin of the patients who had hematemesis was 7.9 gms. with the lowest being 3.2 gms. The longest period of time between the date of a patient's first hematemesis and the shunt procedure was 10 years. The average period was 1.6 years.

Sixteen of the 24 patients received whole blood transfusions. Only three of the 19 patients who had bleeding varices had a Sengstaken-Blakemore tube for tamponade; however, in many cases it was kept in the patient's room or at least on the floor where it would be immediately available in case an acute episode of hematemesis would recur. Arginine therapy was administered to one patient prior to operation.

Barium Meal

It is well known that esophageal varices can occur with no radiographic evidence even when the best technique is employed.[8] However, when the radiograph does show the filling defect pattern of esophageal varices it is a valuable diagnostic aid. Fourteen out of the 23 patients who had a barium meal prior to operation had demonstrable esophageal varices.

Case No. 13 was a 39-year-old white female with Laennec's cirrhosis. The patient's first barium meal on 2/7/57 revealed no varices; however a second barium meal on 11/5/57 revealed a typical radiograph of esophageal varices. *See Figures 2 and 3.* This patient's first hematemesis was on 7/29/57. She had three bouts of hematemesis prior to an end-to-side splenorenal anastomosis. The patient had a barium meal several weeks after surgery and no evidence of varices were noted; however, the actual films were misplaced. The patient had no recurrence of frank hematemesis after approximately one year follow-up.

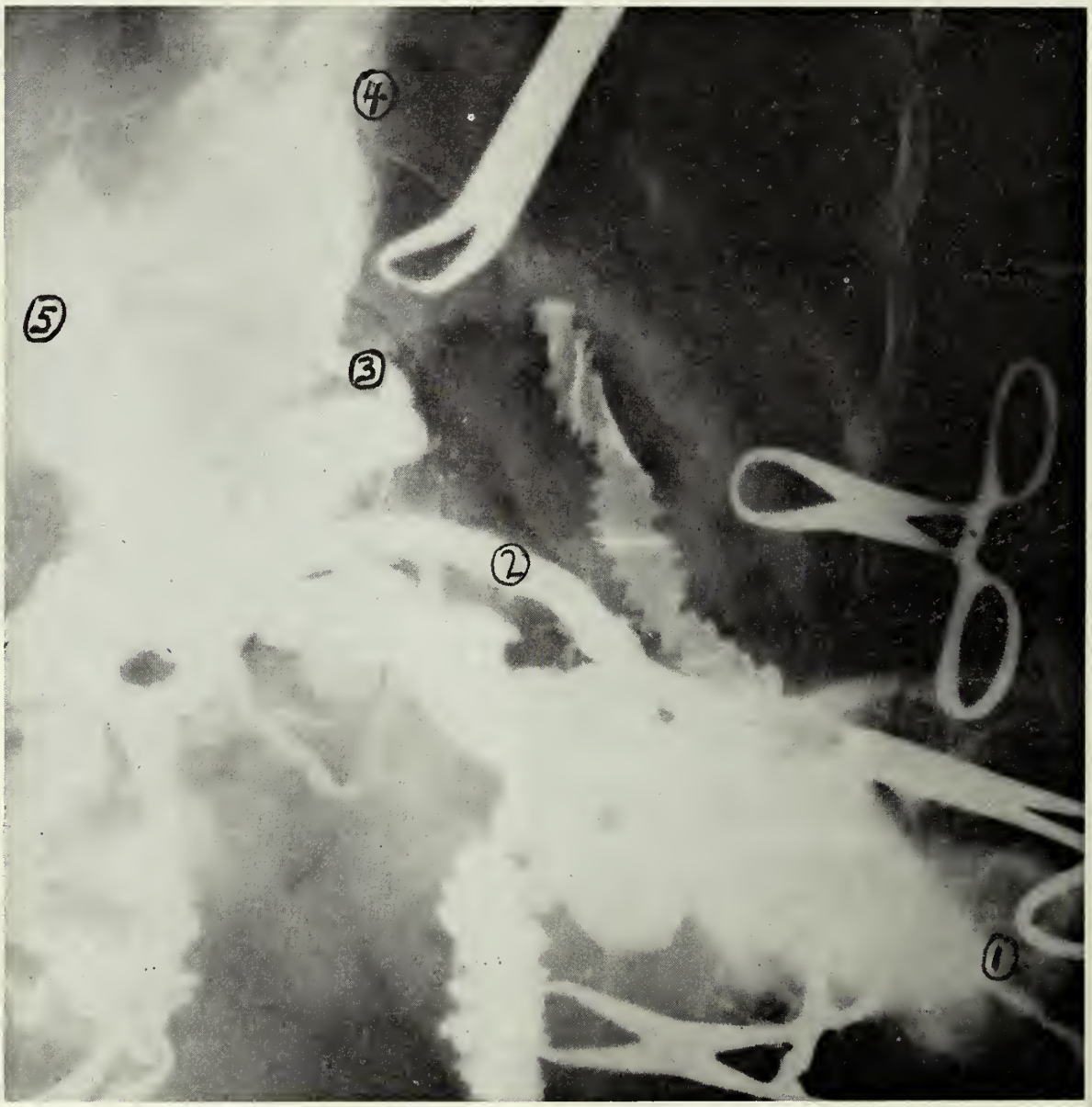


Figure 1. This is an splenogram taken at the time of an end-to-side splenorenal anastomosis. *(Case No. 1)* The splenogram reveals: 1. the needle which was used to inject the uricon into the spleen, 2. the splenic vein, 3. the dilated coronary vein, 4. the esophageal varices, and 5. the cavernomatous transformation of the portal

Only six patients out of this group of 24 had barium meals postoperatively. All but one of these showed definite improvement radiographically. Three were read as no esophageal varices demonstrable and two as slight irregularity of the esophageal contour indicating minimal residua of esophageal varices. One case had no change radiographically.

Case No. 16 is of a 61-year-old white male with Laennec's cirrhosis. His first bout of hematemesis was on 1/16/58 and he had two prior to operation. On 2/22/58 the patient's barium meal radiograph revealed extensive varices as seen in *Figure 4*. On 3/12/58 an end-to-side porta-caval anastomosis was performed. It is interesting to note that his portal vein pressure dropped from 36 to 12.5 cm. of H_2O. On 3/21/58 a barium meal radiograph revealed no varices as seen in *Figure 5*. The patient had had no recurrent hematemesis with the last follow-up being two months and 10 days postoperatively.

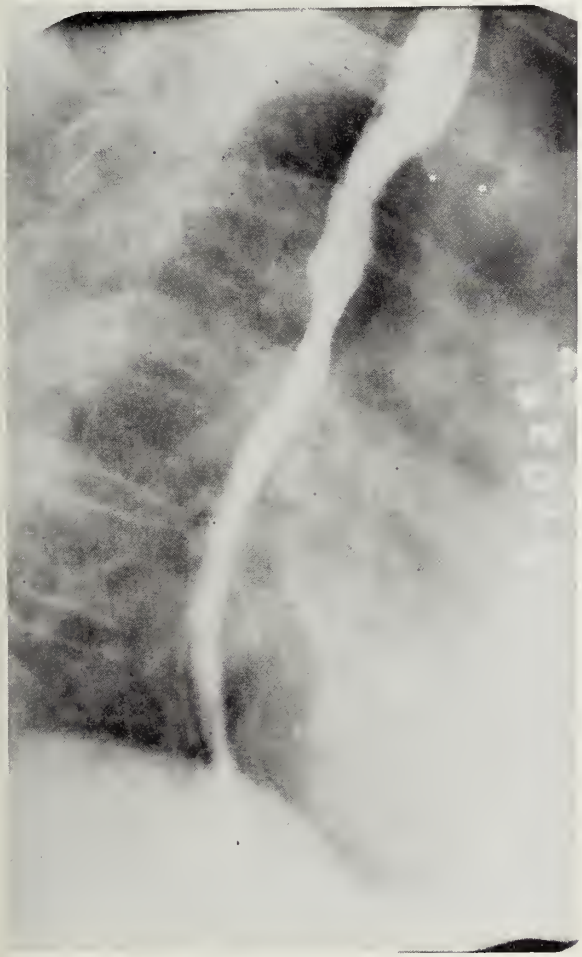


Figure 2. This barium meal x-ray was taken 5½ months prior to this patient's first hematemesis. *(Case No. 13)* There is no evidence of esophageal varices.

Figure 3. This barium meal was taken approximately five weeks after the patient's first extensive hematemesis. It reveals extensive esophageal varices.

Serum Albumin and Globulin

The greatest quantity of serum albumin is produced in the liver and is one of the more reliable indices of liver function. The critical level below which operative intervention will not be tolerated is 3.2 gm./100 ml. Only four patients out of the 23 cases which had serum albumin determinations had a level below 3.2 gm./100 ml. Two of these four died; however, all survived the immediate postoperative period. One of these patients died from excessive bleeding from a gastric ulcer three weeks after a technically satisfactory end-to-side splenorenal anastomosis. One patient died from hematemesis five weeks after a technically successful end-to-side porta-caval anastomosis.

Degree of Portal Hypertension

The pressure in the portal system was determined in all but four cases prior to the actual anastomosis.

Figure 4. This is a preoperative barium meal X-ray. *(Case No. 16)* Note the filling defect which is indicative of extensive esophageal varices. See *Figure 5* for follow-up.

The average pressure in the portal vein was 33.3 cm. of H_2O. The normal portal pressure is 20 cm. of H_2O. The postanastomotic pressure was determined in all but nine cases and the average was 21.4 cm. of H_2O. This makes the average drop in pressure due to the procedure 11.9 cm. of H_2O. The average pressure drop after a porta-caval anastomosis was 16 cm. of H_2O and 10.4 cm. H_2O after a splenorenal anastomosis. Therefore the porta-caval anastomosis was usually a larger shunt and decompressed the splanchnic venous system slightly more, initially at least.

Follow-ups Grouped According to Operation

(1) Splenorenal anastomosis.

The average follow-up period for this group was 1.3 years including two patients who were followed at other hospitals. The records of these two are inaccessible. This average also includes one operative death and three other deaths.

The operative mortality was six per cent. The one patient who died actually died of a cardiac arrest on the way to the recovery room.

Of the 15 which have been followed, 13 have had no recurrent hematemesis. Included in this group is *Case No. 1* of cavernomatous transformation of the portal vein. This child was seven years old at the time of the end-to-side splenorenal anastomosis. In Dr. King's series all who had a splenorenal anastomosis prior to 11 years of age had recurrent hematemesis; however, this child was followed for 4½ years and did not have any recurrence. It is well known, however, that the larger the vessels are which are anastomosed the less likely postoperative thrombosis will occur. *Case No. 8* was a cavernomatous transformation of the portal vein in a six-year-old child. Four months after the end-to-side splenorenal shunt he had frank hematemesis which was treated with transfusions and a Sengstaken-Blakemore tube initially. One week later he sustained an esophagogastrectomy with ligation of the varices at which time the surgeon found the splenorenal anastomosis was

Figure 5. This follow-up barium meal was taken nine days after the end-to-side portal caval anastomosis. Note the smooth contour of the esophagus as compared to *Figure 4.*

thrombosed. The anastomotic line ruptured four days postoperatively, the patient spiked a fever and died 10 days after the esophagogastrectomy. This patient's vessels were not suitable for a porta-caval anastomosis and his splenic and renal veins proved to be too small to allow a successful shunt to be maintained.

Case No. 8 as above and *Case No. 10* had recurrent hematemesis. *Case No. 10* went into hepatic coma three weeks after an end-to-side splenorenal shunt; however, he recovered with medical treatment and has had no recurrent hematemesis since.

There were only four deaths including the operative mortality. One *(Case No. 4)* died from an exsanguinating hemorrhage from a gastric ulcer, another *(Case No. 8)* died as related above, and one *(Case No. 15)* died 1/8/59 and no post-mortem had been done. The overall mortality was 23 per cent.

(2) Porta-caval.

The average follow-up period for these five patients was eight months including three deaths. One patient *(Case No. 17)* developed lower nephron nephrosis secondary to a transfusion reaction and died 10 days after an end-to-side porta-caval anastomosis. One patient *(Case No. 21)* had recurrent hematemesis two months postoperatively which was treated with transfusions and a Sengstaken-Blakemore tube. This controlled the esophageal bleeding. Approximately three months after the operation the patient died from a massive cerebral hemorrhage. The other patient died approximately one month postoperatively from massive hematemesis. Three out of the five had no recurrent hematemesis; however, only two are living. Therefore the overall mortality was 60 per cent; however, the operative mortality was nil.

(3) Esophagogastrectomy.

Six patients who had had esophagogastrectomies at the Kansas University Medical Center were reviewed by Drs. Kittle and Schafer in 1950.[16] Since that time two more have been done at the Medical Center. One of the above eight patients had a cardiac arrest several hours after surgery and one had recurrent bleeding 18 months postoperatively. The latter patient died from hemorrhage 21 months after the resection. Therefore the overall mortality was 25 per cent and the operative mortality was 12.5 per cent. Six patients, the equivalent of 75 per cent, have not had recurrent hematemesis.

Summary

This paper includes a summary of the etiology of portal hypertension, a brief history of operative advances, examples of the variety of emergency treatment for esophageal variceal bleeding and a review of 24 patients with portal hypertension and operative intervention.

Seventeen splenorenal anastomoses were accomplished with a six per cent operative mortality. Eighty-seven per cent of these patients had no recurrent hematemesis with an average follow-up of 16 months.

Five porta-caval anastomoses were done with no operative mortality. Sixty per cent had no recurrent hematemesis with an average follow-up of eight months.

Eight patients had esophagogastrectomies and there was a 12½ per cent operative mortality. Seventy-five per cent had no recurrent hematemesis with the average follow-up period being 11 months.

Editor's Note: References may be obtained by writing the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 315 W. 4th Street, Topeka, Kansas.

PREPARATION OF MANUSCRIPTS FOR THE JOURNAL

Exclusive Publication: Articles are accepted for publication on condition that they are contributed solely to this Journal. Publication elsewhere will be subsequently authorized in the discretion of the Editor.

Correspondence: Address all correspondence relating to publication of scientific papers to the Managing Editor.

Manuscript: Type double spaced, on white paper, 8½ by 11, with one-inch margins at the top, bottom, and right, and 1½ inches on the left. Submit the original. Call drugs by their generic names. The trade names can be added, in parenthesis, if they are considered important. Keep one copy of the paper.

Footnotes and References: Use the style of the *Quarterly Cumulative Index Medicus* published by the American Medical Association, which requires, in the order given: name of author, title of article, name of periodical, with volume, pages, month—day of month if weekly—and year as follows:

4. Doe, J. E., What I Know About It, J. Kans. M. S. 54:717-719 (Dec.) 1954.

Include only those references specifically referred to in the text.

Reprints: An order slip for reprints with a table covering cost will be sent with the galley proof to each contributor.

Illustrations: A reasonable number of illustrations are allowed without cost to the author. Place the name of the author on the back of each illustration, table, etc. Submit clear and distinct, glossy photographs. Make drawings in black ink on white paper. Attach a slip of paper to the bottom of the illustration with the author's name, identification of article, and appropriate legend. Identify the top of the illustration. Photographs and drawings will be returned if so requested.

Under ordinary circumstances articles are scheduled several months in advance. Notice will be given the contributor when the article has been accepted and again before publication.

Society members throughout the state are encouraged to write up their interesting cases and submit them for publication. The editorial staff welcomes the opportunity of helping you prepare your article for the printer.

Committee REPORTS

Summary of Committee Minutes

A meeting of the **Executive Committee** of the Kansas Medical Society was held on Saturday, July 16, in Topeka. Present were Dr. F. E. Wrightman, President, Doctors N. L. Francis, H. M. Glover, J. L. Lattimore, H. St. Clair O'Donnell and Glenn R. Peters. Also present was Mr. Rueben Dalbec of the American Medical Association, Mr. James Imboden, Mr. Dallas Whaley, and Mr. Oliver E. Ebel.

Doctor Wrightman, Doctor Francis, and Doctor O'Donnell, each of whom attended the A.M.A. meeting in Miami, reported briefly on that convention. They spent some time speaking with exhibitors concerning the 1961 Annual Session at Wichita. Upon telling them the Kansas plan was to limit participation by commercial companies to 50 of major medical interest, they found the companies enthusiastic.

The Executive Office frequently is requested to supply mailing service or Rosters for commercial firms outside medical activities. The Executive Committee made the following policy:

1. Any member may use the mailing services of the Society at cost, upon request.
2. Individuals or companies advertising in THE JOURNAL OF THE KANSAS MEDICAL SOCIETY may use the mailing services of the Society at cost.
3. Individuals or companies who appear to the Executive Office and the president to offer services of benefit and interest to the profession, if they have a direct relationship to the practice of medicine and are reputable in their intent, may use the mailing services of the Society at cost.
4. All individuals or companies having a commercial interest, who appear to be reputable and whose literature seems to the Executive Office and to the president to be of value to the profession, may have envelopes addressed to the Society at a cost of $15.00 for membership.
5. All other requests shall be denied.

The president read a letter from Dr. J. L. Morgan of Emporia, suggesting that when letters are written to Senators and Congressmen, an additional effect can be achieved if they are signed by the wives. This suggestion was approved and the Executive Office was directed to add it to future letters when it becomes desirable for the membership to contact their Congressmen.

Committee activity will be summarized in this section of the *Journal* each month for the purpose of information. Each committee chairman or the President will welcome suggestions. Should further information be desired, the complete minutes may be obtained by inquiring through the Executive Office, 315 West 4th Street, Topeka.

Committee activity is the foundation of Society effort. Recommendations by committees do not become Society policy until approved by the Council or when they represent a major departure from existing policy, after adoption by the House of Delegates.

There followed a discussion of the request by the 45 Podiatrists of Kansas to have their legally performed services payable under Blue Shield. This question had been discussed by Blue Shield and the request rejected. The Committee decided Mr. Whaley and Mr. Skelton visit with members of the Podiatry Association to state the A.M.A. is investigating the subject at present and to ask for time to learn the

results of that survey before Kansas will act upon the question.

The president informed the Committee that the secretary of the Board of Health asked approval of a sample study of cardiovascular deaths. This decision was referred to the Council. The secretary of the Board of Health is to be advised that the Society will not be in position to answer his request until October, when the Council will meet.

The next item of business concerned listing possible subjects that might later be submitted to the Council for activities of the 1961 Kansas Legislature in which the Kansas Medical Society should take an active position. One concerned the problem of the revision of the Coroner's Law. It was recommended this should first be taken to the Committee on Pathology for recommendations and then submitted to the Council. Another was revisions of the Workman's Compensation Law, which project has already been approved by the House of Delegates. A third possible subject is a revision of the Commitment Law, which was approved by the House of Delegates. Fourth, it appears possible that there will be some legislation affecting the Board of Health. The Society should also have an interest in any legislation affecting the University of Kansas and all educational institutions, but particularly whatever might affect the School of Medicine. Welfare also might receive attention from the Legislature. Between this date and the next meeting of the Council, there could be an expanded list.

The next major item for discussion was a review of the status of the Supreme Court decision on Natanson. The Executive Committee authorized the appointment of a special committee to explore the possibility of writing a piece of legislation to define some of the aspects of malpractice, to refer its recommendations to the specialty societies of Kansas and then to the Council, prior to the opening of the session of the Legislature.

It was announced Governor Docking re-appointed Doctors Robert Moore and Francis J. Nash to the Healing Arts Board, as requested by the Kansas Medical Society.

A question was raised about whether an abbreviated audit should be published in THE JOURNAL or if a brief synopsis should be prepared in quantity to be mailed to any member upon request. After some discussion a decision on this subject was referred to the Council.—O. E. E.

All five **Medicare Review Committees** met during the past month. The Topeka and the Kansas City Committees met on Monday, August 1. The Manhattan, Salina and Wichita Committees met on Tuesday, August 2. Most of the committee members were present at each meeting. This committee reviews all exceptional Medicare claims, and in the course of these meetings, brought up to August 1 all the Kansas claims on services rendered by physicians to dependents of servicemen. A few will be sent to Washington for final adjudication. The remainder are completed and should be paid within a short time.

The committees wish to thank physicians for their co-operation on this federal program. In most instances claims are handled immediately through Blue Shield. Where exceptional circumstances exist in which something concerning the case does not fall into predetermined categories, the Review Committee must study the claim and make recommendations. Among these, some must be sent to Washington, which occasion further delays. The very few cases now going to the Review Committees testify to the fact that physicians are doing an excellent job in the operation of this program.—O. E. E.

The **State Meeting Format Committee** meeting was held in Salina on August 7, 1960. Present were the following committee members: Dr. H. M. Glover, chairman, Drs. William J. Justus and Robert K. Purves.

Present from the Saline County Medical Society were Dr. H. S. Dreher, Dr. John C. Mitchell, and Dr. L. S. Nelson, Sr. Also present were Mr. John Cranor, secretary of the Salina Chamber of Commerce, and Mr. Oliver E. Ebel.

The committee recommended to the Committee on Constitution and Rules that amendments be prepared to enable the House of Delegates to meet once during each annual session to conserve time. It was suggested all resolutions be sent in advance to be distributed to each society before the State Meeting. The Reference Committee would review all resolutions at a specific time during the State Meeting. The House of Delegates would act on these resolutions in a manner similar to the final meeting under the present system. It was felt all reports and resolutions made at the first House of Delegates meeting could be prepared in advance and distributed. These could be introduced by the Reference Committee at the single-day session.

After hearing from members of Saline County and from the secretary of the Salina Chamber of Commerce, the committee recommended that the 1963 Annual Session be held in Salina and that this question be submitted for decision to the Council.

Plans for the 1961 Annual Session at Wichita are complete and were prepared by the Format Committee a year ago. These have been approved by the House of Delegates.

The format for the 1962 Annual Session, to be held in Kansas City, was to hold the athletic events on Monday, the scientific sessions on Tuesday and

Wednesday, and that specialty meetings be included if possible. They especially recommended to the Wyandotte County Medical Society the exploration of live television for a portion of the scientific program. They recommended that the annual banquet be held at 7:30 p.m., and if the House of Delegates approves the previous suggestion, only one house of Delegates meeting will be held on Wednesday. The Reference Committee will meet on Tuesday.

This general outline will be submitted to the Council for adoption and then forwarded to the Wyandotte County Medical Society.—O. E. E.

The **Perinatal Welfare Committee** was held in Topeka on August 7, 1960. Present were Dr. William H. Crouch, chairman, and Drs. Henry Aldis, J. M. Graham, G. F. Jordan, R. C. Knappenberger, L. R. Pyle, P. T. Schloesser, Robert N. Shears, and T. E. Young. Also present was Mr. James Imboden.

In discussing an addendum for the manual in "Care of the Newborn," the committee agreed that prior to approval the General Academy of Pediatrics should be contacted to determine the present feeling in regard to the use of triple dye.

A discussion of the progress being made by local hospitals in Kansas in regard to follow-up programming in the field of Perinatal Mortality studies led to the following conclusions. First of all, that a uniform perinatal form used on a state-wide basis would be an absolute necessity. The chairman felt that such a form would be presented at the Rocky Mountain Regional American Medical Association meeting in Denver, Colorado, on August 14, 1960. In this event, Doctor Crouch would present such a form at the next meeting of the committee. Secondly, it was thought that a survey of Kansas hospitals should be conducted in order to determine to what extent Perinatal Mortality Committees have been established. In conducting such a survey, it was suggested that a question be included to determine the interest in state-wide workshops on Perinatal Mortality Study Committees.

The specialty meeting on Obstetrics and Pediatrics which was held in conjunction with the 1960 State Meeting was considered extremely successful by all members of the committee. In spite of this fact, the committee agreed that no effort would be made to develop a similar program for the next State Meeting. It was felt that such a meeting might be more effective if it were held every two or three years.

A report was given on the status of the work now being done in Kansas concerning the protection of perinatal mortality study groups from litigation. A proposed bill prepared by the Kansas State Board of Health for presentation to the state legislature was read. It was suggested that the following addition be made to the bill—"To include hospitals licensed by the Kansas State Board of Health." Follow-up will be left in the hands of the State Board of Health.

The committee spent a considerable part of the meeting reviewing and discussing a statistical analysis of birth certificates of 1959 prepared by the Maternal and Child Welfare Division of the Kansas State Board of Health. Because of the magnitude of the project, no definite decisions were made. Another meeting of the committee will be necessary following the American Medical Association meeting in Denver where a number of items included on this agenda will again be taken up in light of the information obtained at Denver.—J. S. I.

The **Committee on Constitution and Rules** met Sunday, August 14, 1960. Present were Dr. A. W. Fegtly, chairman, and Drs. J. K. Griffith, Y. E. Parkhurst, and C. E. Vestle. Also present were Mr. Dallas Whaley and Mr. Oliver E. Ebel.

The House of Delegates has for some time recommended that smaller societies should unite, but since this involves a loss in delegate representation, the committee made a recommendation for a manner of solving that question.

There are five political counties in which no organized society exists where physicians belong to adjacent societies. These, Gray, Hodgeman, Linn, Ottawa, and Wabaunsee, should be incorporated into district societies.

There are 35 single county societies, each with a membership of more than ten. There are 23 single county societies, each with a membership of less than ten. According to a resolution adopted by the 1960 House of Delegates, requiring a society to have not less than three members, the Chase and Osage County Societies will now need to unite with some other society. In addition, there are seven multicounty societies.

The committee recommends the By-Laws be altered to allot one delegate to the House of Delegates from each political county in the state and that each component society be allotted one delegate for each 20 members and major fraction thereof. The committee recommended that multicounty societies determine whether each county within its jurisdiction should actually send a delegate. In fact, this would slightly increase the total number of delegates and would retain the identity of small counties. The amendment will be submitted to the House of Delegates next spring.

The committee took under advisement whether it will be necessary to continue with two separate sessions of the House of Delegates or whether business

(Continued on page 489)

The President's Message

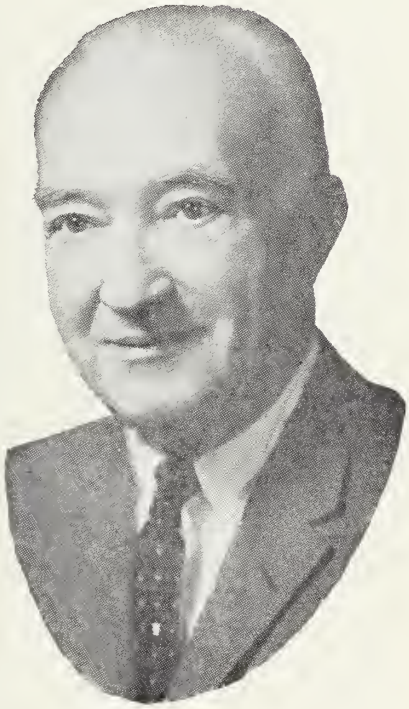
DEAR DOCTOR:

We are approaching one of the most privileged times. This time (election day) gives a special freedom to every American. It is a heritage handed down by a band of men, many years ago, who were much more inbred with the protection of their people. Yet Americans with all of their privileges have failed to take the opportunity given to them.

Why can't everyone take a few minutes to read carefully the planks of both parties? Weigh with care the qualifications of the winning nominee of each party and then vote for the team of your choice. But do vote, vote, vote!

One thing that probably few people know is that there are 41,000,000 uncommitted votes in the United States at election time. This group will be the deciding factor in the coming election. It is up to each of us to influence our friends and neighbors who fall into this category and be sure we are not there ourselves.

Let us all put our shoulders to the wheel and make use of the privileges our forefathers fought for and gave to us.



Yours very truly,

President

H.R. 12580

A significant victory was scored by American medicine on August 23 when the Senate by a vote of 51 to 44 rejected the Anderson amendment, a plan to provide health care of the aged under the social security mechanism. . . . The Senate also turned down, 67 to 28, an amendment by Sen. Jacob K. Javits (R., N. Y.) which featured a broader Federal-state program of "preventive" care for the aged. . . . Thus, the Senate agreed that a Federal-state cost sharing plan—H.R. 12580 as amended by the Senate Finance Committee—would be the best approach in meeting the health needs of the aged. . . . The Senate Finance Committee's amendments to H.R. 12580 had been accepted by the Senate, August 20, on a motion by Sen. Harry Byrd (D., Va.), committee chairman. . . . The Senate's action in keeping health care of the aged out of the social security program is a triumph for all those who have worked in the past few years to beat back the various Forand-type proposals. . . . However, because the Democratic party plank calls for providing health care of the aged under social security, it is certain that similar legislative struggles will arise in the next Congress.

The Anderson amendment would have provided hospital, nursing home, home nursing, and diagnostic and x-ray benefits for some nine million persons 68 and older who are currently eligible for social security benefits. . . . Total costs of this plan, estimated at $700 million in the first year and up to $1 billion later, would have been financed by a one-half per cent increase in the social security tax.

Of the 67 senators who voted against the Javits amendment, 62 were Democrats and five were Republicans. . . . All 28 votes for the amendment came from Republicans. . . . The Javits plan would have been an addition to the limited Federal-state cost sharing medical plan approved by the Senate Finance Committee. . . . The Javits proposal, which did not have the support of the A.M.A., would have provided prospective beneficiaries with a three-way choice: One would cover short-term illnesses, another would cover catastrophic illnesses, and a third would provide subsidies to help individuals pay part of the cost of private health insurance. . . . Sen. Javits said it would have cost the government some $320 million to $460 million a year, with the states putting up about $520 million. . . . It would have covered some 11 million aged who currently are not receiving public assistance.

The Senate version of H.R. 12580 will now go back to the House of Representatives. The House can accept or reject the Senate amendments. More likely, the bill will be sent to a Conference Committee to try to resolve the differences between the House and Senate versions of the bill. . . . If the Conference Committee reaches agreement on the bill, it is almost certain to pass both Houses and go to the President for his signature. . . . President Eisenhower is expected to sign the bill if it retains most of the features now in it.

New Constitution and By-Laws

As you have noticed, THE JOURNAL came to you this month in a new way. Be sure, before you discard the envelope it came in, that you have removed the copy of the new Constitution and By-Laws. This booklet has been printed in a limited number, so it will be necessary that you keep the enclosed copy for your file.

The Committee on Constitution and Rules, with Dr. A. W. Fegtly as chairman, has spent many hours preparing and revising the Constitution and By-Laws in order to bring you this new format. It has been designed to facilitate reading and reference work. The committee particularly wanted each member of the Society to receive a copy of the new Constitution and By-Laws because there have been many changes and revisions incorporated in the Constitution since

its last publication in 1952. The committee hopes that every member will take time to study the Constitution and note the revisions. This is very important since the material in this booklet is the foundation of the Kansas Medical Society's policies.

Committee Minutes Summarized In Journal

The last House of Delegates asked that a brief summary of every standing committee meeting be published in the JOURNAL. Beginning with this issue, this will be a new feature. It will be found monthly during the season of committee activity under the section devoted to Committee Reports. The House of Delegates feels that a reporting of Committee minutes in the JOURNAL will provide an excellent means for every member of the Society to be kept up to date and informed of the activities that may change Society policy.

It is stressed, however, that these summaries are only a small portion of the discussion and work being carried out for the Society through its Committees, and it is hoped that members who are interested in a particular activity will contact the committee chairman and express their views on the subject or ask for further information. It would be impossible to carry the entire minutes of the meetings, which are in themselves a very brief synopsis of the events. In writing the chairman and expressing your views, please remember that all committee actions are only in the nature of a recommendation to the House of Delegates and are not Society policy or law *per se*. All committee actions and recommendations must be approved by the Council or the House of Delegates before they are incorporated into the Society's program.

Doctor Wrightman Recovering

Dr. F. E. Wrightman, President, is recovering from a serious infection which involved his heart. Following a period while he was considered to be seriously ill, Doctor Wrightman has made a steady and dramatic recovery. His physicians advise they are most pleased with his progress.

Doctor Wrightman is now a patient at the University of Kansas Medical Center, 39th & Rainbow Blvd., Kansas City 12, Kansas.

The Society is grateful for his excellent recovery and sends this expression from its individual members wishing him continued improvement and the rapid return to full time activity, both in his practice of medicine and to his office as President.

Committee Reports

(Continued from page 486)

can be introduced prior to the annual meeting, studied by the Reference Committee on one day, and voted on at the single session of the House of Delegates on the final day. Comments on this subject will be appreciated.

The committee rejected a recommendation to change the By-Laws whereby councilors would be elected one year in advance of the beginning of their three-year term with the recommendation that each Council District could do what they desired in this regard. The committee also recommended each county medical society should annually be sent an account of the responsibilities of the councilor toward his district.

The major business was proofreading the reprinting of the Constitution and By-Laws which will appear as a supplement to this issue of THE JOURNAL. —O. E. E.

Check the Air Conditioner When Troubled By Itching Skin

If you wake up at night with a burning, itching skin, check the air conditioner in your bedroom. Chances are this summer standby is flooding the room with mites.

According to an article in the current issue of *GP*, published by the American Academy of General Practice, the air conditioner is a perfect nesting place for birds, common mite carriers.

Dr. A. S. Genest, Atlanta, Ga., points out that immediate showering will relieve the itching to some extent, but a fine, generalized rash may develop. The rash disappears, however, if the mites are removed from the skin's surface.

Because of their size—1/50th of an inch long—avian mites (so called because they live on feathered animals) are difficult to see.

To prevent a mite invasion, homeowners are advised to screen both the air intake on air condititioners and the warm, dry ledges below the units. This stops birds from nesting there. Window ledges should be painted with commercial preparations especially designed to discourage avian mite homesteaders.

There are many differences between men and women. A woman's brain, for example, is generally smaller than a man's. Women are more easily hypnotized than men. Women tend to see better (men have ten times as much color-blindness) and not to hear as well (women are more likely to be afflicted with hearing loss resulting from the growth of bone in the middle ear).

The Business Side of Medicine

Income Tax Savings in an Estate

FLOYD F. WEHRENBERG, ***Kansas City, Missouri***

Because of the high income taxes, spendable income is more important than income before taxes. There are three major factors which determine the spendable income that will be available to the beneficiaries of an estate. (1) The amount of property involved, (2) the amount of net income that the property will produce, and (3) the amount of income taxes that will be required on the income produced.

Generally, much more attention is given to avoiding the estate taxes on an estate than in planning for saving income taxes after death. However, the saving of income taxes may be of more importance to the beneficiaries of an estate than the estate tax savings that may be effected.

All of us realize that income taxes will be reduced if any given amount of income is divided among two or more persons. Obviously, then, splitting income under a will results in a lower tax. For example, if income is divided among the wife and children, it is often possible to effect an attractive tax saving, which in turn increases the spendable income to the family. As an illustration, consider Doctor X who has a wife and two children. According to estimates, his estate will produce an annual income of $12,000. If the entire income is paid to Mrs. X, her annual Federal Income Tax will be approximately $2,370. Although a large portion of her income will be used for the support of the children, it will be taxed entirely to her. As an alternative, instead of leaving the total income to Mrs. X, assume that it is practical to pay $1,000 each to the two children outright and $750 per child is accumulated in a trust. Mrs. X's income would thereby be reduced to $8,500 and her tax to $1,450. Each child would pay $62 tax and the trusts would pay $130 tax per child, making a total tax of $1,834 on the $12,000 income. This would mean an annual tax saving of $536 over the first plan.

Maximum Protection First

The principal objective of a husband's will is, in most cases, to provide maximum protection for the wife. However, if an estate is likely to produce more income than the wife will need, it is certainly logical to remove the surplus income from her top tax bracket and have it taxed to other beneficiaries in the lower brackets. It should be remembered in all cases that even though a division of income is indicated under the will, emphasis should be upon a practical plan rather than tax economy.

There are some cases where planned use of the principal can save income taxes. As an example, take the case of Dr. Y. Annual income from his estate will be $40,000. At his death he would like his wife to have the benefit of the entire income but would also like to have her income tax burden kept to the minimum. Under his will he divided his estate into two equal parts, one to be left in trust for his wife and the other divided into separate trusts for his children. The $20,000 income from Mrs. Y's trust is to be paid to her. The same amount of income

Mr. Wehrenberg is Missouri-Kansas Manager, Professional Management Midwest, 4010 Washington Street, Kansas City, Missouri.

is to be accumulated in separate trusts for the minor children. Then in order to offset the economic loss to Mrs. Y of having half of the income accumulated for her children, the will provides that she may withdraw a specified sum of principal from her trust each year. The trustee is also given discretionary power to pay additional principal to her in the event of need.

In this case, Mrs. Y will be taxed on only $20,000 of trust income instead of $40,000. Since she also has the right to principal which is not subject to tax, Mrs. Y could be given the same or a greater amount of spendable income as she would have received had she the right to the entire income. The income that goes to the trusts for the children will be taxed at much lower rates and thus considerably more of the income will be retained. The effect of this arrangement is that while the wife's trust will decrease, the trusts for the children will increase. In the end there may be more capital for the ultimate welfare of the entire family in this way.

Study This Carefully

With this and all other estate matters, action should be taken only after a thorough study of the content and purpose to be accomplished by your estate and then with the guidance and counsel of your estate attorney. However, in estate tax planning as in living tax planning, it should be remembered that the spendable income available to your heirs is far more important than the gross income to your estate before income taxes.

Newborn Babies May Be Drug Addicts

The tiny, two-day-old baby squirms violently in his crib, creating ugly red areas where skin has been rubbed raw. He has trouble breathing, seems hungry —but often ignores a bottle. He screams, cries and is nauseated, restless and irritable. His problem? His mother was a drug addict—and he's suffering the tortures of withdrawal.

The problem of narcotic addiction among newborn infants is not new but it's become more and more of a problem in recent years, two New York University pediatricians claim. Writing in the *GP* magazine, published monthly by the American Academy of General Practice, Drs. Annabelle Vincow and Alvin Hackel point out that 12 drug-addicted infants were born at Bellevue Hospital during a recent nine-month period. One study, on a series of untreated cases, showed a mortality rate of 93 per cent.

A newborn baby's addiction to morphine or one of its derivatives (usually heroin) may begin many months before it's born. Opiates have no trouble penetrating the placental barrier. Then, when the baby is born and no longer gets the drug, withdrawal symptoms start. The nervous system becomes suddenly and violently overactive. In severe cases, the baby may go into convulsions and die.

As with many adult addicts, drug substitutes must be used and then slowly withdrawn. The two doctors also urge that the baby remain hospitalized, allowed to breathe moist oxygen and be fed either through a nasal tube or intravenously.

The authors also urged doctors to check the mothers for signs of addiction before the baby is born. These include constricted pupils, needle scars and ulcerations over hand and forearm veins. Early detection may help save the baby's life.

If the mother can stay away from "the needle" for a week or ten days prior to delivery, the baby usually will not suffer withdrawal symptoms. This, however, is difficult for the true addict who usually needs three or four capsules of five per cent heroin a day.

Family Physicians Back "Project Hope"

The nation's family doctors formally endorsed "Project Hope," a plan that will send four modern hospital ships to ports-of-call around the world.

Meeting in Miami Beach, the American Academy of General Practice Board of Directors affirmed its "Project Hope" enthusiasms with a $1,000 contribution. The Academy further urged its 26,000 members to volunteer for either one-year or two-month tours of duty on one of the four newly equipped ships.

Dr. Floyd C. Bratt, Rochester, N. Y., the Academy's president-elect, was named chairman of a special "Project Hope" committee.

The Academy believes that trained family doctors can make continuing contributions to medical care standards in all parts of the free world. They cannot only treat patients but they can pass along, to doctors and technicians in other lands, up-to-date diagnostic and therapeutic techniques.

"Project Hope" is headed by Dr. William Walsh, a Washington, D. C., physician. It is a voluntary-contribution program that does not rely on federal funds. The four ships, part of the famed mothball fleet, were made available to the project at the suggestion of President Eisenhower. Operating expenses will come from individual contributions. The first ship is expected to sail in September.

Although making up less than 14 per cent of the driving population, drivers under age 25 were involved in nearly 29 per cent of all fatal accidents in the United States during 1959.

Blue Shield

Organized Medicine Advances Voluntary Health Insurance

An action described as the most significant ever endorsed by organized medicine to advance and strengthen voluntary health insurance programs in America was taken by the American Medical Association at its 190th Annual Meeting early this summer in Miami, Florida.

It was cited by AMA spokesmen as the "beginning of a new era of growth and progress for Blue Shield as well as the entire voluntary health insurance industry in the nation."

At this year's annual meeting, the AMA declared itself in favor of all-out support of Blue Shield Plans by the medical profession as a necessary step in preserving the voluntary approach to the problem of financing medical care.

Local Level Involved

This action was described as "precedent-setting," and came when the House of Delegates approved a report by the Council on Medical Service which set forth specific proposals for closer relationships between the AMA and Blue Shield both locally and at the national level.

In addition to urging an extension of physician participation in Blue Shield Plans, the AMA action set forth a basis for strengthening liaison with Blue Shield and defined a positive basis for extending the effectiveness of Blue Shield.

Blue Shield was defined by the House of Delegates as "a proper economic arm of the medical profession and a major component of the nation's voluntary health insurance systems."

More Blue Shield Participation

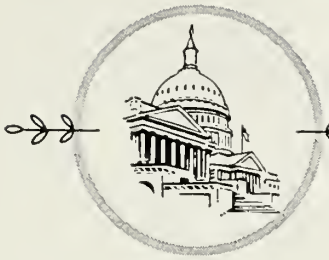
To implement the Council's proposal for closer ties between Blue Shield and the AMA, the House of Delegates action calls for adding two members to the Board of Directors of the National Association of Blue Shield Plans.

These new board appointees would serve in addition to the three appointed members of the Blue Shield Board, and would be selected from the Council on Medical Service. Proposals were also approved for closer AMA-Blue Shield staff work, plus an annual conference between the Council on Medical Service and the Board of Directors of the National Association of Blue Shield Plans.

Improvement at the Local Level

At the local level, the AMA action calls for comprehensive experimentation by Plans directed toward continued improvement of their coverage and encourages closer ties between local Plans and their sponsoring medical groups.

The Council on Medical Service report grew out of an action by the American Medical Association in Dallas last year which called for a declaration of a full statement of policy with respect to the AMA's relationship with Blue Shield Plans, including a clarification of the present policy with respect to the future development of medically sponsored insurance programs operated in the interests of medicine and the public and dedicated to the preservation of the principles fundamental to the American system of private medical practice.



Washington HIGHLIGHTS

This summary of Washington news is prepared by the A.M.A. Washington Office for distribution to state medical journals.

Democrats and Republicans are campaigning on opposing planks on the issue of health care for the aged. The Democratic party advocates the Social Security approach; the Republican party favors federal aid in the field, but outside the Social Security system.

The GOP Plank Pledged

Development of a health program that will provide the aged needing it, on a sound fiscal basis and through a contributory system, protection against burdensome costs of health care. Such a program should:

- Provide the beneficiaries with the option of purchasing private health insurance—a vital distinction between our approach and Democratic proposals in that it would encourage commercial carriers and voluntary insurance organizations to continue their efforts to develop sound coverage plans for the senior population.
- Protect the personal relationship of patient and physician.
- Include state participation.

The Key Paragraph of the Democratic Plank

The most practicable way to provide health protection for older people is to use the contributory machinery of the Social Security system for insurance covering hospital bills and other high cost medical services. For those relatively few of our older people who have never been eligible for Social Security coverage, we shall provide corresponding benefits by appropriations from the general revenue.

Charles H. Percy, Chairman of the GOP Platform Committee, stated that the reference to a "contributory system" in the Republican plank did not mean a Social Security tax.

Presidential and vice-presidential candidates of both parties went into the election campaigns pledged to support the health-care-for-the-aged planks adopted by their respective conventions. Vice-President Richard M. Nixon, the GOP Presidential nominee, already was on record as unalterably opposed to any program of national compulsory health insurance. The long-established position of Sen. John F. Kennedy of Massachusetts, the Democratic Presidential candidate, has been "that only by use of the Social Security system can we have true health insurance."

Doctors Speak at Conventions

Speaking for the American Medical Association, Dr. Edward R. Annis of Miami, Fla., appeared before the platform-drafting committee of the Democratic convention at Los Angeles, and Dr. Leonard W. Larson, A.M.A. President-elect, before the Republican policy group at Chicago.

The A.M.A. spokesmen warned both parties that a program following the Social Security approach "would be unpredictably costly; it would unnecessarily cover millions of people; it would substitute service benefits for cash benefits; it would lead to poorer—not better—quality of medical care; it would overcrowd our hospitals; it would lead to the decline, if not the demise, of private health insurance; and it would interfere dangerously with the doctor-patient relationship, which is the solid foundation upon which effective medicine must be based."

Dr. Annis also urged support of the House-approved Mills plan to provide health care for the needy aged who need help with the federal government and the states sharing the costs outside the Social Security mechanism.

Why We Support Mills Bill

In an advertisement run in some large daily newspapers in mid-August, the A.M.A. outlined its reasons for supporting the Mills plan, the ad said, in part:

The A.M.A. believes our nation, as well as its senior citizens, will best be served by a locally administered health aid program designed TO HELP THOSE WHO NEED HELP. . . .

- We are equally sincere in our opposition to legislative measures that approach the problem on a shotgun basis—with the idea of increasing repeatedly

the Social Security tax in order to finance health benefits for EVERYONE who is covered by the Old Age, Survivors and Disability Insurance program, regardless of their need.

There are many serious hazards in using the Social Security approach to finance medical and hospital care for our older citizens. When government starts telling the doctor how to practice medicine; telling the nurses how to nurse; telling the hospital how to handle its patients, the quality of medical care is sure to decline. The cost of such a program eventually would be staggering, and would make a serious dent in the pay envelopes of millions of Americans covered by Social Security. Private, voluntary health insurance, which has been doing such a magnificent job, would be undermined and, in time, destroyed.

Most important, perhaps, is the fact that such an approach would just be the beginning of compulsory, government-run medical care for every man, woman and child in the United States. For it wouldn't be long before the Federal Government would be lowering the age at which people would be eligible, and adding one costly service after another to a program that would place your health care under the Federal Government's thumb. And let's not forget that our present health care is recognized to be the world's finest.

Watch It

Insects are more dangerous than reptiles. According to *Today's Health* magazine, more Americans will die this summer from insect than snake bites.

"Each year, more Americans die from the stings of little insects buzzing in our gardens and parks than from bites of all venomous reptiles combined," according to the magazine published by the American Medical Association.

"It is possible," says Dr. Harry Mueller of Boston, "that unrecognized cases account for some of the sudden deaths attributed to heart failure and heat prostration in the insect season."

Some 25 insects have been reported to produce allergic symptoms in man, but the insects causing most reaction are the honeybee and bumblebee and three kinds of wasps—yellow jackets, hornet and Polistes.

A knowledge of the nature of bees and wasps can be helpful in avoiding stings. The article stresses these points:

- If you see more than two yellow jackets or bumblebees disappear under leaves in a woods, it is likely their nest is located there. Do what comes naturally.
- If you are buzzed by a bee or wasp, never flail at at it with your arms. Walk slowly away.
- Bees seem to be angered by dark shades. White or khaki clothing does not bother them.
- To keep yellow jackets and bees from gathering at picnic tables, spray the area with a repellent chemical.
- Bees and wasps are attracted by hair oils and perfumes which contain floral odors.

Summed up it means—beware of bees.

Nursing School Admissions Gain

Admissions to schools of professional and practical nursing reached an estimated 71,297 new students in 1959, compared with 68,851 in 1958.

Professional nursing programs admitted 47,797 new students, a slight increase over the 47,351 admissions of the preceding year. Practical nursing schools enrolled an estimated 23,500 students in 1959, compared with 21,500 in 1958. Data are for the calendar year and are gathered annually by the National League for Nursing through questionaire surveys of professional and practical nursing schools.

Among professional nursing schools, diploma programs in hospital and independent schools continued in the academic year 1958-1959, as in previous years, to enroll the largest number of new students—37,686 or 81.4 per cent of the total. College programs offering a bachelor's degree in nursing admitted 7,275 freshmen nursing students, or 15.7 per cent of the total. Associate degree programs in junior and community colleges, a recent development in nursing education, admitted 1,266 or 2.8 per cent of the total. Percentages for baccalaureate and associate degree programs were slightly higher than in 1958.

It was also reported that admissions to professional nursing schools now nearly reach the capacity of these schools to accommodate new students. The need for qualified teachers and teaching facilities was cited among the factors limiting the enrollment expansion possibilities of professional nursing programs. While the number of professional nursing programs remained nearly static—1163 in 1959 compared with 1164 in 1958—the number of practical nursing programs increased from 580 to 607, with a comparable rise in the number of students entering this field.

Civilizations are measured in many ways. One is by the height of their heroes. We might keep that in mind whenever we find ourselves falling for the grin, the studied bad grammer, the Good Guy approach, the fishin' pole and the freckles.

—*Clifton Fadiman*

Personalities—IN KANSAS MEDICINE

Announcement has been made of the new officers and directors of the Kaw Valley Heart Association who took office on July 1.

New President of the Association for 1960-61 is **Dr. Wayne O. Wallace** of Atchison. President Elect for 1961-62 is Thomas M. Van Cleave, Jr., Kansas City, Kansas lawyer and member of the State Legislature.

Two wives of members of the Society have been elected as Vice-Presidents, Mrs. Veryl J. Elson, widow of the late Dr. Elson, Paola, and Mrs. Donald J. Smith of Overland Park, Kansas. In addition, 20 members of the Kansas Medical Society and their County Societies are also members of the Board of Directors of the Association, although none were up for election this year.

The Kaw Valley Heart Association, a Chapter of the Kansas and American Heart Associations, serves nine counties of Northeast Kansas from a central office at the University of Kansas Medical Center: Atchison, Doniphan, Douglas, Franklin, Jefferson, Johnson, Leavenworth, Miami, and Wyandotte. The Executive Director and Health Educator of the Association, Mrs. L. M. Treadwell, is also an Associate in the Department of Postgraduate Medical Education of the Medical Center.

Dr. Wallace has commented: "The stated purpose of the Association from its founding has been 'to serve the physician,' through community education, and a variety of specialized services to the individual doctor for his patient in addition to the support of research. In our Chapter area we are in the enviable position of having larger sums returned to us in the form of research grants to the University of Kansas and its Medical Center than are contributed each year."

Dr. C. H. Diener has closed his office in Haven, ending a general practice which began five years ago. During this time Dr. Diener has assisted in administering to the illnesses and needs of persons in the Haven community and surrounding areas. His medical proficiency, personal integrity and conscientious concern for the welfare of his patients have earned him the respect, as well as genuine affection, of those with whom he has been associated.

On August 13, Dr. Diener will leave for Denver, Colorado, where he will be joined by Mrs. Diener and their three sons.

The family will board an airliner on August 15 to Chicago and New York. Their destination is Aibonito, Puerto Rico. Here the doctor will serve on the staff of Mennonite General Hospital, one of a team of three doctors. He will work also in the nearby clinic.

The family will spend two years in Aibonito under the sponsorship and guidance of the Mennonite Board of Missions.

Dr. H. R. Bryan, who has chalked up 50 years as a "Country Doctor" to thousands of Western Kansans, has retired from active practice and will go to the West Coast where he will make his home with two sisters in Portland, Oregon. Dr. Bryan has practiced in Hays 38 years.

Dr. C. F. Taylor, Norton, was recently honored when the American Academy of Tuberculosis Physicians presented him with a certificate of Excellate Standing.

The certificate states: "The American Academy of Tuberculosis Physicians Confers Excellate Standing upon Charles F. Taylor, M.D. X L 8."

Accompanying the certificate were these words: " 'Excellate' designates the highest proficiency attained by a Doctor of Medicine in his chosen field of Tuberculology and ancillary medical problems, in fulfilling the highest ideals of medicine, complemented by years of devotion to his chosen field, ever applying constant study and experience, together with unstinted non-competitive service to alleviate the sufferings of mankind through basic scientific

NEW MEMBERS

The JOURNAL *takes this opportunity to welcome these new members into the Kansas Medical Society.*

James M. Donnell, M.D.
132 N. Minnesota
Wichita 14, Kansas

Charles I. Gired, M.D.
El Dorado Nat'l Bank Bldg.
El Dorado, Kansas

Kiyoshi G. Hachiya, M.D.
2125 W. Maple
Wichita 13, Kansas

James A. Powell, M.D.
Douglass, Kansas

John W. Schmaus, M.D.
St. Francis Hospital
Wichita 14, Kansas

Robert S. Wilson, M.D.
213 S. Hydraulic
Wichita 11, Kansas

knowledge and the firm conviction that dedicated service to mankind is likewise service to his God."

The certificate has been framed and hung in the hall on the fifth floor of the Kenney Memorial Hospital.

Dr. C. J. Kurth, Wichita, was guest speaker at the Ninth Annual Meeting of the International Federation of the Catholic Physicians Guilds in Munich, Germany, July 25 through July 30. He is current President of the Catholic Physicians Guild of the diocese of Wichita.

Dr. William R. Beine, Coffeyville physician, is the new president of the Board of Education.

He was elected at a meeting of the board. Dr. Beine served as vice-president last year.

Dr. G. B. McIlvain, Clay Center, was nominated as a Republican candidate for county coroner by a write-in vote, the county commissioners determined during their canvass of the votes.

Dr. McIlvain, who has been the coroner for some time, received 124 votes for the nomination.

The Hanover Chamber of Commerce was host at a dinner honoring **Dr. G. L. Mowry** and **Dr. Roger Warren** at the LeRoy Cafe.

Dr. Mowry has left Hanover, after a little over five years practice here during which time he operated the Hanover Hospital, and has taken up a Residency in Obstetrics and Gynecology at the University of Kansas Medical Center, Kansas City, Kansas.

Dr. Roger Warren, who has practiced at Enterprise, Kansas, for the past two years, has taken over Dr. Mowry's practice and the operation of the Hanover Hospital. He is a graduate of the University of Kansas Medical School, and served his internship at Bethany Hospital, Kansas City, Kansas.

The dinner served as a farewell for Dr. Mowry and as a welcome for Dr. Warren. About 35 members attended the dinner.

The staff of the Russell Clinic, Great Bend, Kansas, has announced the association of a new member. **Dr. W. C. Niederee** joined the group July 1, 1960. With the association of Dr. Niederee, the medical staff now totals four doctors.

Dr. Niederee spent two years at the University of Kansas and two years at Creighton University, Omaha, Nebraska, in pre-medical education. He graduated from the Creighton University School of Medicine in 1956. While attending the University, he was a member of Phi Rho Sigma medical fraternity. After graduation from Creighton, Dr. Niederee interned at Saint Francis Hospital, Wichita, Kansas, and then accepted a three year residency in general surgery which he completed in June of this year.

Dr. and Mrs. Niederee, both natives of Larned, Kansas, have three sons and reside at 2915 Broadway, Great Bend, Kansas.

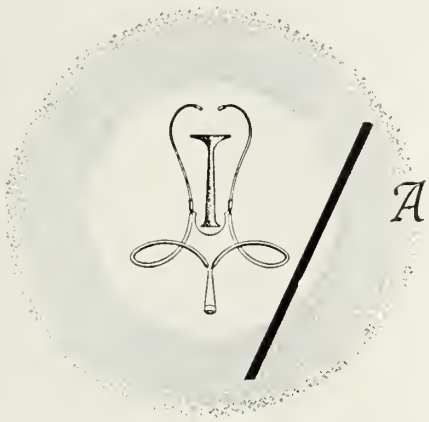
Hair is nourished from below, hence it can't be nourished from atop. It can't be changed to permanently wavy or permanently straight, either. This is because round hair shafts grow straight while oval shafts grow curly, and the shape of the shaft is determined below the top layer of skin.

If you are average, your hair grows about an inch every six weeks. If you are a man, the hairs on your head are almost all different from the ones that were there six months ago. You constantly create new skin, new bone and new blood cells, too. Fact is, don't be surprised if you wake up tomorrow feeling like a new person!

Do you ever wake up feeling like a "new person?" You are. More than 98 per cent of the atoms in your body were not present one year ago today.

And what a body it is! Your muscles do more work per pound of fuel than the most efficient steam engine ever built. Your heart is likely to pump two billion strokes without failure—over ten times as many trouble-free strokes as one could expect from the cylinder in an engine of a luxury-priced automobile.

The tiniest bits of life are human cells. Most cells range in size from one thousandth to one ten-thousandth of an inch across. You have about 26 trillion such cells—26,000,000,000,000 in numerals —and they teach a lesson in multiplication, for they all get their start from the division and subdivision of one fertilized egg cell. In each cubic centimeter of blood, roughly, one-half a cubic inch) a healthy man has 5 billion red blood cells. A woman has 10 per cent fewer.



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the DOCTOR'S CALENDAR. *Notice of the session is posted in advance to allow the physician time to make preparations.*

The Kansas Board of Basic Science Examiners will give examinations in the subjects of anatomy, bacteriology, chemistry, pathology and physiology on November 4-5, 1960, in Science Hall, Kansas State College, Pittsburg, Kansas. Satisfactorily completed applications for examination should be submitted at least 30 days prior to date of examination. Application blanks and other information can be obtained from Dr. L. C. Heckert, Secretary of the Kansas Board of Basic Science Examiners, Pittsburg, Kansas.

The Oklahoma Chapter of the American Academy of General Practice will sponsor the seventh annual meeting of the Red River Valley Section at Lake Murray Lodge, Sunday, September 11, 1960.

An outstanding film "BUILDING FOR TOMORROW" will be shown through the courtesy of Wyeth Laboratories who will co-sponsor the meeting. Lectures and discussions will be presented by the following three guest speakers from the University of Oklahoma School of Medicine; Dr. John A. Schilling, professor and head of Department of Surgery; Dr. John P. Colmore, associate professor of Medicine; and, Dr. William L. Waldrop, associate professor of Orthopedic Surgery.

Doctors are urged to bring their families and come a day ahead on Saturday to enjoy the entertainment of boating, water skiing, pool or lake swimming, dance orchestra on Saturday evening and Smorgasbord Sunday noon.

This meeting is acceptable for four hours of Category I credit by the American Academy of General Practice.

The Section of Opthalmology and Otolaryngology of the Southern Medical Association announces a most outstanding program for its annual meeting in St. Louis, Missouri, October 31 to November 3, 1960.

The program opens Monday, October 31 with a live color television program on "PREVENTIVE AND CURATIVE TREATMENT OF RETINAL DETACHMENT" by Paul A. Cibis, M.D., Associate Professor of Clinical Ophthalmology, Washington University School of Medicine, St. Louis, Missouri and Bernard Becker, M.D., Professor and Chairman of the Department of Ophthalmology, Washington University School of Medicine, St. Louis, Missouri and the Staff.

Then follows a luncheon with Dr. Samuel D. McPherson, Jr., Durham, N. C. presenting a paper on "CLOSURE OF CORNEAL WOUNDS WITH CATGUT SUTURES" and Dr. Miles L. Lewis, Jr., New Orleans, Louisiana, presenting a paper on "GELFOAM IN STAPEDECTOMY."

The afternoon session starts at 2:00 p.m. with St. Louis Day continuing and Drs. Theodore E. Walsh, James E. Miller, Robert N. Tindall, Robert A. Moses and Guerdan Hardy all from St. Louis, Missouri, presenting papers.

Tuesday, November 1, the Chairman, Dr. George M. Haik of New Orleans, Louisiana, will present the chairman's address "SUBLUXATED AND DISLOCATED LENSES" followed by A. D. Ruedemann, Jr., M.D., Detroit, Michigan, presenting a paper on "A CLINICAL STUDY OF ALTERNATING HYPERTROPIA"; William W. Vollotton, M.D., Charleston, S. C. on "IATROGENIC EYE DISEASES"; Harry Harwich, M.D. and David Kosner, M.D., Coral Gables, Florida on "EFFECT OF WHIPLASH INJURIES ON OCULAR FUNCTIONS"; Alston Callahan, M.D., Birmingham, Alabama on "MORE RECENT EXPERIENCE WITH

ALPHA-CHYMOTRYPSIN"; John Nowell, M.D. and George Ellis, M.D., New Orleans, Louisiana on "LIGHT COAGULATION IN TREATMENT OF RETINAL DISEASE"; Wendell D. Gingrich, M.D., Galveston, Texas on "THERAPY OF CEPHALOSPORIUM KERATOMYCOSIS"; Clay W. Evatt, M.D., Charleston, S. C. on "CONGENITAL CATARACTS"; Robert A. Schimek, M.D., New Orleans, Louisiana on "USEFUL VARIATIONS IN TECHNIQUES FOR SURGERY OF BLEPHAROPTOSIS"; and then a "CONTACT LENS SYMPOSIUM" with Thomas J. Vanzant, M.D., Houston, Texas; Donald Fonda, M.D., Ridgewood, New Jersey; Jack Lee, M.D., San Antonio, Texas; Captain Norris L. Newton, M.C. Brooks Air Force Base, San Antonio, Texas.

Wednesday, November 2, William M. Trible, M.D., Washington, D. C., will present a paper on "DESTRUCTIVE LESIONS OF THE SUPERIOR MAXILLA RESEMBLING MALIGNANCY"; Donald F. Proctor, M.D., Baltimore, Maryland, on "BLEEDING FOLLOWING TONSIL AND ADENOID OPERATIONS"; Lyle M. Sellers, M.D., Dallas, Texas, on "THE ROUND WINDOW—A CRITICAL RE-EVALUATION"; Ben H. Senturia, M.D., Robert Goldstein, M.D. and Benjamin Rosenblut, M.D., St. Louis, Missouri, on "RESULTS OF MASTOTYMPANIC SURGERY: A CRITICAL EVALUATION"; Harry Zoller, M.D., New Orleans, Louisiana on "STAPEDECTOMY WITH VEIN GRAFT FOR DEAFNESS DUE TO OTOSCLEROSIS"; and ROUND TABLE DISCUSSION with Drs. Lyle Sellers, Ben Senturia, Harry Zoller and Miles Lewis, Jr.

The meeting will close with a business session Wednesday, November 2, 1960.

For any further information about the meeting, please contact the secretary, Dr. A. C. Esposito, Suite 1212, First Huntington National Bank Building, Huntington 1, West Virginia.

The Kansas Thoracic Society Annual Meeting will be held on September 22, 1960, at the University of Kansas Medical Center, Kansas City. The program is as follows:

10:00 a.m. Registration

10:30 a.m. *Clinical Patterns in Emphysema.*
William Ruth, M.D., Veterans Administration Hospital, Kansas City, Missouri.

11:00 a.m. *Recent Advances in the Study of the Pathogenesis of Emphysema.*
Roger S. Mitchell, M.D., The Colorado Foundation for Research in Tuberculosis, Denver, Colorado.

11:30 a.m. C.P.C. Moderator, Frank Mantz, Jr., M.D., St. Joseph's Hospital, Kansas City, Missouri.

1:30 p.m. Thoracic Society business meeting.

2:00 p.m. *Report on the Arden House Conference on Tuberculosis.*
Martin J. FitzPatrick, M.D., University of Kansas Medical Center, Kansas City, Kansas.

2:30 p.m. *The Pharmacology of Bronchodilator Drugs.*
Jesse Rising, M.D., University of Kansas Medical Center, Kansas City, Kansas.

3:00 p.m. *Early Surgery in Tuberculosis.*
Patrick Storey, M.D., Veterans Administration Hospital, Baltimore, Maryland.

3:30 p.m. Coffee break.

3:45 p.m. *Viral Respiratory Diseases.*
Robert Huebner, M.D., National Institutes of Health, Bethesda, Maryland.

4:15 p.m. *X-ray Patterns in Cardiovascular Disease.*
James Crockett, M.D., University of Kansas Medical Center, Kansas City, Kansas.

Wards for Gynecological Care Studied

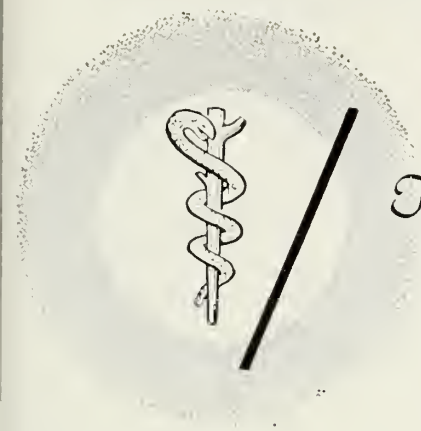
Seven national medical organizations will make a survey to determine the advisability and feasibility of using a portion of the obstetrical facilities in large cities for the care of gynecological patients, it was announced at the 8th annual meeting of The American College of Obstetricians and Gynecologists in Cincinnati.

Dr. John I. Brewer of Chicago, then president of the College, said the purpose is to relieve the shortage of beds in other sections of a hospital.

"With the building of new hospitals and additions in suburban areas, people have turned to a greater use of the maternity facilities near their homes," Dr. Brewer said. "This has materially reduced the demands upon city institutions. In some large urban hospitals the maternity section is only about 50 to 60 per cent occupied. This is an economic loss."

Co-operating with ACOG in the study will be the American Academy of General Practice, American Academy of Pediatrics, American Hospital Association, American Public Health Association, the Children's Bureau of the Department of Health, Education and Welfare, and the maternal health, nursing, and statistics sections of the United States Public Health Service. The project is made possible by a grant from the National Institutes of Health.

A qualified epidemiologist will be selected to initiate the program and to direct the study on a full time basis.



The Kansas Press Looks at Medicine

***Editor's Note.** In this section the* Journal *reproduces editorials relating to medicine which have appeared in the lay press. An effort is made to include both favorable and unfavorable comments, and the Editorial Board in no instance assumes responsibility for the opinions expressed.*

Do-It-Yourself Health Program

A great deal of attention is being given to the health problems of the growing elderly proportion of our population. Out of this, it is to be hoped, will come programs and policies that will meet the needs without imposing on us the costly regimentation that some proposed legislation would make inevitable.

One point deserves to be much more widely understood than it is—the problems involved are not, by any means, confined to medical care, and hospital and nursing home service. Dr. Edward L. Bortz, a past president of the American Medical Association, has made that clear. As he puts it, major afflictions of older citizens today can be traced to faulty diet, flabby bodies, excessive fatigue, and aimless living. And, he adds, a do-it-yourself health program designed to cure or alleviate these afflictions can be the greatest insurance policy for a longer, healthier life.

In his words, our society is "immature and youth-oriented." So this is the time to cease "worshipping the glamour and romance of youth" and concentrate on the contributions that the mature older citizen makes to our society.

One of the most urgent needs is to abandon the custom of compulsory retirement at age 65 or any arbitrary figure. Great numbers of people now attain their period of top performance at 65 or older. To consign them to the ranks of the idle is to do them a grave injustice—and to deprive the nation of energies, abilities, and experience it can use to vast advantage.—*Great Bend Herald Press*, July 23, 1960.

Rival Health Insurance Planks

Democrats are counting strongly on the health insurance plank in their platform advocating Social Security tax increases to finance medical care of those on Social Security. This would cover many millions of people, a large percentage of whom are able to pay their medical costs.

That puts it up to the Republicans. They are extremely unlikely to try to outbid the Democrats, though Gov. Nelson Rockefeller is proposing to do even more. He will bring in four million persons over age 65 not covered by Social Security and any others not eligible. If a beneficiary did not choose to take the health benefits, Rockefeller would add a monthly cash benefit to the Social Security check.

Neither are the Republicans likely to go as far the other way as the American Medical Assn. proposes to the GOP platform committee. The AMA policy is that when a person is unable to provide for his health care, the responsibility passes to his family and then to the community, the county and the state. Only when all of these fail, says AMA, should the federal government come in. And then the need should be determined locally.

Addressing the platform committee, President-elect Dr. Leonard W. Larson of the AMA said: "The majority must be allowed to continue its use of the voluntary method without federal interference. To compel that majority to accept federal medicine rather than allow it to buy its own medical care voluntarily . . . subverts the very principles upon which a free, democratic government must be based."—*Wichita Eagle*, July 21, 1960.

It was not until I had seen the waterworks at Chicago that I realized the wonders of machinery; the rise and fall of the steel rods, the symmetrical motion of great wheels is the most beautifully rhythmic thing I have ever seen.—*Oscar Wilde*

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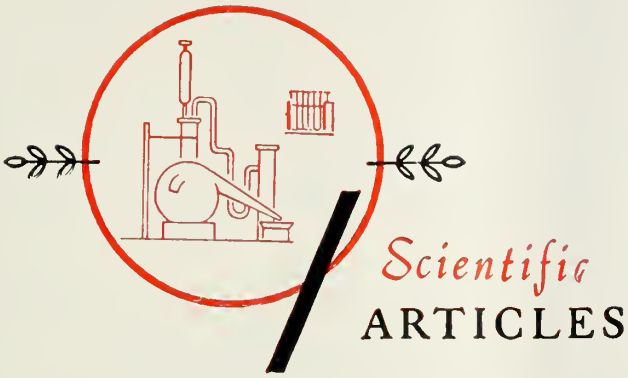

Pernicious Anemia

Report of a Case Treated With ACTH

MARJORIE S. SIRRIDGE, M.D.; THOMAS R. HOOD, M.D., *and* ALBERT JACKSON, M.D., *Kansas City*

A report is made of an anemic patient, later proved to have pernicious anemia, who responded to therapy with 40 units of ACTH given daily over a period of 50 days. With the ACTH therapy there was a suboptimal reticulocytosis and a slow rise in hemoglobin and hematocrit, however, the bone marrow did not revert to normal. When B_{12} therapy was substituted, the patient showed greater reticulocytosis, a rise in hemoglobin and a hematocrit to completely normal values, and a reversion of the bone marrow to normal.

THE MOST COMMON AND most important megaloblastic anemia in the United States is pernicious anemia, which is attributable to a deficiency of Vitamin B_{12} resulting from impaired absorption of this vitamin from the gastrointestinal tract.[1] Most of the therapy in the disease has been directed toward the correction of this deficiency with the administration of Vitamin B_{12}, or Vitamin B_{12} with intrinsic factor, and, in a few instances, folic acid or citrovorum factor.[2]

Megaloblastic Anemia

Since the introduction of ACTH and the corticosteroids, several reports have appeared in the literature concerning the response of megaloblastic anemias to these substances. In 1950 Thorn, *et al.* reported one patient with pernicious anemia who showed a reticulocytosis of 7.5 per cent without a change in red cell count after receiving 60 mgm. of ACTH daily for eight days. They reported that with ACTH therapy the red cell elements of the bone marrow changed from immature to mature forms.

In 1951 Wintrobe, *et al.* reported two cases of pernicious anemia treated with ACTH (for eight and ten days respectively). One showed an increase in white blood cells from 2,500 to 6,000 per cmm., a reticulocytosis of eight per cent with no change in hematocrit, followed by a 50 per cent reticulocytosis when B_{12} therapy was started. The second case showed a reticulocytosis of seven per cent without a change in hematocrit, followed by a 40 per cent reticulocytosis after B_{12} treatment. Also in 1951 Lowenstein, *et al.* reported two cases showing reticulocyte responses of 14.6 per cent and 11.7 per cent respectively. The second case showed a definite, but suboptimal, increase in red cell mass from 1,185 ml. to 1,861 ml.,

From the Veterans Administration Hospital, Veterans Administration Consolidated Center in Wadsworth, Kansas.

after receiving 600 mgm. ACTH over a six day period. This increased red cell mass was maintained for three months despite the cessation of ACTH therapy after eight days. Both patients showed increasing maturity in bone marrow with therapy, but recovery was incomplete until B_{12} was given. Spies in 1955 and

Fig. 1.

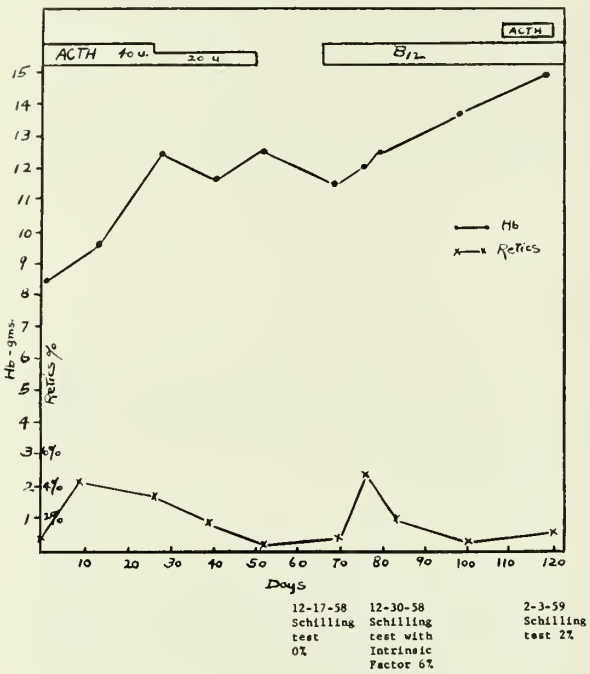

Figure 1. Hemoglobin and Reticulocyte values during ACTH and B_{12} therapy.

Glass in 1956 reported an increase in hemoglobin with a reticulocyte response in patients receiving ACTH or prednisone for Sprue.

In 1957 Doig, *et al.* reported studies showing response to Prednisone in eight of nine patients with megaloblastic anemia. Three of these patients had pernicious anemia, one had pernicious anemia and rheumatoid arthritis, two had coeliac disease, two had megaloblastic anemias associated with rheumatoid arthritis, and one had megaloblastic anemia following partial gastrectomy. The eight patients who responded showed a suboptimal reticulocytosis, and a slow rise in red blood cell count and hemoglobin. There was no initial fall in serum iron levels following institution of therapy. One patient with pernicious anemia developed subacute combined degeneration of the cord five weeks after Prednisolone therapy.

Absorption of B_{12}

In 1958 Frost and Goldwein reported on the effect of Prednisone on the absorption of radioactive B_{12} in pernicious anemia by the Schilling technic. Only one of three patients showed a significant increase in absorption of $CO_{60}B_{12}$ from .2 per cent to 11.9 per cent after Prednisone had been given for 14 days. In 1959 Gordin described in detail two cases of pernicious anemia in relapse treated with corticosteroids for 21 days or more. These patients showed hematologic remission, return to normal of bone marrow, a decrease of serum iron, a decrease of erythrocyte diameter, and a rise in serum B_{12} levels.

This report concerns the response of a patient, later proved to have pernicious anemia, to therapy with 40 units of ACTH given daily over a period of 50 days.

CASE REPORT

This 66-year-old white male boxer was first admitted to the Wadsworth Veterans Administration Center in May, 1951, with a recent thrombosis of the left middle cerebral artery, right sided paralysis, aphasia and agnosia. His blood pressure was 140/80. Since that time he has been confined to a wheel chair and has gone through variable periods of mental confusion and combativeness. At the time of his first admission the hemoglobin was 16 gms. and the WBC was 10,850.

He was readmitted to the hospital on September 2, 1953 as a custodial case. There were no unusual happenings until February 2, 1958 when vomiting started. There was a questionable left upper quadrant mass on February 23, 1958. Exploratory laparotomy was performed and positive findings were old adhesions around the gallbladder and three areas of small intestine, five to 15 cms. long, that were indurated. The intestinal wall was thickened, injected, and the mesentery fat was creeping out at the side of the intestinal wall. A gross diagnosis of regional ileitis was made. There was no evidence of obstruction. At this time the hematocrit was 43 VPC and the WBC was 10,000.

First Sign of Anemia

In April, 1958, it was first noticed that the patient was developing anemia, and on May 8, 1959, RBC was 3,300,000, hematocrit was 35 VPC, and hemoglobin was 10.2 gms. The patient was transferred to Gastrointestinal Service on June 10, 1958. Physical examination was essentially negative except for anemia, aphasia, right hemiplegia, mental confusion, and agitation. All gastrointestinal studies were negative. On July 3, 1958 the hemoglobin was 8.3 gms. The patient received several blood transfusions. On August 11, 1958 a bone marrow aspiration was performed and reported as showing a megaloblastic marrow with numerous atypical cells and mitotic figures. It was considered to be possibly a reactive marrow to malignancy or lymphoma. The anemia at

that time was of the normocytic, normochromic type, with a hemoglobin of 9.4 gms. and a hematocrit of 30 VPC. An attempt to do a gastric analysis was unsuccessful due to the lack of cooperation of the patient. Kidney function tests were normal.

On October 13, 1958 the patient was started on ACTH, 40 units daily. The dosage was reduced to 20 units daily on November 10, 1958 when the hemoglobin had reached 12.3 gms., the hematocrit 39 VPC, RBC 3,800,000 and reticulocyte count 3.2 per cent.

A repeat bone marrow aspiration on November 26, 1958 showed again megaloblasts, and at this time the anemia was found to be of the macrocytic type. Another attempt at gastric analysis was performed successfully and this revealed achlorhydria. A stool fat determination revealed mild increase in the dry fat content (38 per cent). A Schilling test done on December 17, 1959 revealed zero per cent uptake of $CO_{60}B_{12}$, and the patient was started on B_{12}, 100 mcg. daily by injection. On December 24, 1958 his reticulocytes had increased to 5.8 per cent and the hemoglobin was gradually rising. It was felt that this was the typical type of response expected in pernicious anemia. A Schilling test with intrinsic factor done on December 30, 1958 revealed six per cent uptake.

Therapy with ACTH was started again on January 26, 1959 and the Schilling test was repeated on February 3, 1959 in an attempt to determine the effect of ACTH on the absorption of B_{12}. The result revealed two per cent excretion. ACTH was discontinued and the patient has been continued on B_{12} therapy. On February 6, 1959 hemoglobin was 14.8 gms., hematocrit 47 VPC, reticulocyte count 1.1 per cent and WBC 10,100. Since that time the hemoglobin has remained at approximately this level.

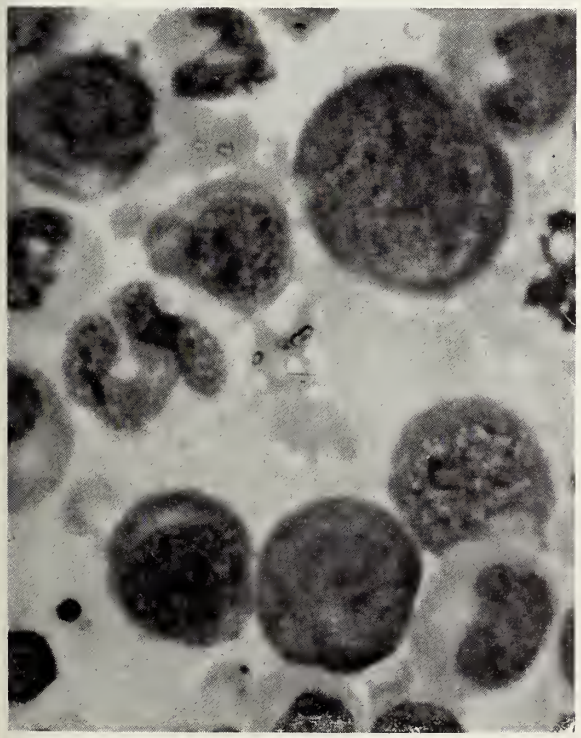

Figure 2. Megaloblastic bone marrow prior to ACTH therapy. (8-11-58)

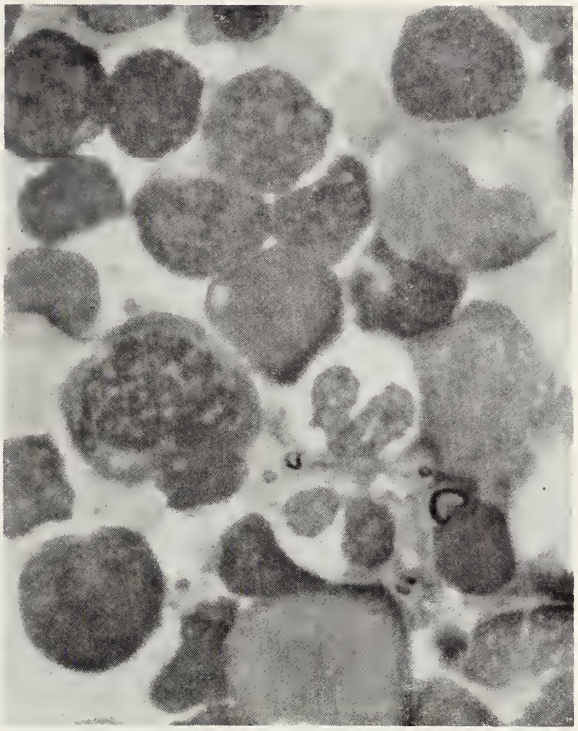

Figure 3. Megaloblastic bone marrow after ACTH therapy. (11-26-58)

Discussion

At the time of the initial hematologic study of this patient, the findings in the peripheral blood and bone marrow were not considered to be diagnostic of pernicious anemia, and further studies were not attempted. The anemia was essentially normocytic, normochromic, in type. The marrow did contain megaloblasts *(Figure 2)* but these were not thought to be the predominant abnormality. The ACTH therapy was instituted because of the suggestion that the pathology in the bowel was either a lymphomatous process or regional enteritis. It was quite surprising that the patient showed a reticulocytosis of 4.2 per cent and a rise in hemoglobin to 12.3 gm. on the ACTH therapy *(Figure 1)*.

Perhaps even more surprising was the fact that a bone marrow study performed after this response had occurred showed little improvement *(Figure*

3) despite the rise in hemoglobin to almost normal levels. By the time the second marrow study was done, the anemia had become somewhat macrocytic and hyperchromic, and pernicious anemia was considered definitely a diagnostic possibility. The absence of gastric HCl and a positive Schilling test confirmed this diagnosis. The patient then showed more reticulocytosis (5.8 per cent) and a rise in hemoglobin to completely normal values when Vitamin B_{12} was instituted *(Figure 1)*. The bone marrow reverted to normal following this therapy, showing a complete disappearance of its megaloblastic features *(Figure 4)*.

Slow Rise in Hemoglobin

This patient showed the same type of suboptimal reticulocytosis and slow rise in hemoglobin, which has been described by other investigators. However, the changes in bone marrow described by others were not observed in this patient's marrow until after Vitamin B_{12} was given. The patients described by the other investigators received therapy for only short periods of time (no longer than three weeks), while in this patient ACTH was continued for approximately 50 days. It is possible that the bone marrow in this patient would have shown a different picture if the study had been done sooner after the beginning of ACTH therapy.[3-5, 8, 10]

The mechanism for the improvement which occurs with the use of ACTH or cortisone in cases of pernicious anemia is not understood. Most investigators consider it unlikely that ACTH increases the secretion of intrinsic factor. Doig, *et al.* found that there was no increase in Vitamin B_{12} in serum in their patients, and in the one case investigated there was no improvement in the absorption of $CO_{60}B_{12}$. They also found that the initial fall in serum iron level constantly seen in pernicious anemia within 48 hours after B_{12} therapy did not occur with Prednisolone. However, Gordin reported two cases of pernicious anemia in relapse that responded to corticosteroids with a significant increase of serum B_{12} levels. The Schilling test revealed improved absorption of $CO_{60}B_{12}$ to 8.6 per cent and 8.8 per cent when therapy was continued 21 days or more in these two patients, and also smaller increases in five patients with pernicious anemia in remission treated for shorter periods of time. However, in a totally gastrectomized patient the Schilling test showed no change with the same therapy.

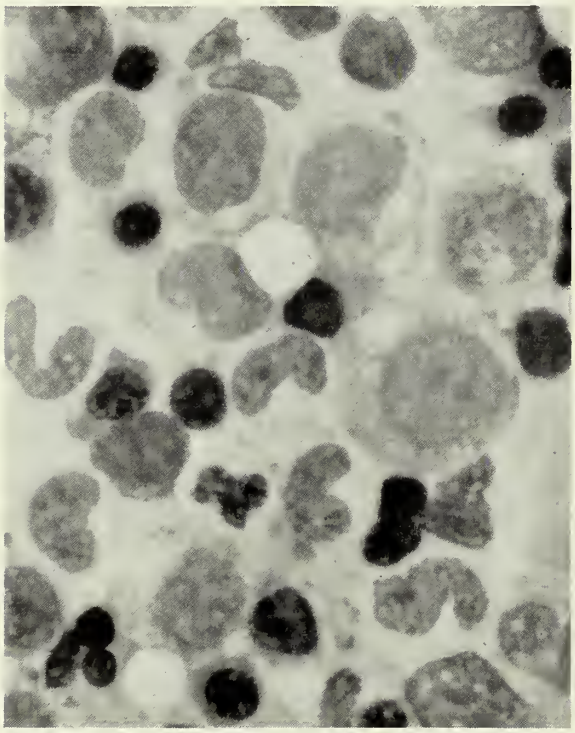

Figure 4. Normal bone marrow after B_{12} therapy.

Our Patient's Schilling Test

In our patient the Schilling test showed zero per cent excretion of $CO_{60}B_{12}$ initially (December 17, 1958), six per cent when given with intrinsic factor (December 30, 1958) and two per cent when repeated without intrinsic factor (February 3, 1959) ten days after ACTH therapy had been reinstituted. It is possible that the absorption would have been more significantly increased if the ACTH had been continued for a longer period of time.

Since pernicious anemia may occur in patients for whom ACTH or cortisone is prescribed, it is important to recognize that such an improvement in the blood picture, as has been described, may occur. In one of the patients described by Doig, *et al.*, a patient developed subacute combined degeneration of the cord five weeks after Prednisolone therapy was given. The relationship of the steroid therapy in this case is not known, but it demonstrates again the dangers of treating the blood picture only in pernicious anemia.

Suite 258
New Brotherhood Building
Kansas City 1, Kansas

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(Continued on page 511)

Prevention in Psychiatry

The Concept of Preventing Mental Illness

H. G. WHITTINGTON, M.D., *Lawrence*

THE DREAM OF PREVENTING mental illness is not new, but has gained impetus in recent years, and is hailed by some as the great white hope of the mental health movement. The clinician finds himself in a curious dilemma when hearing of efforts at prevention. Because of his day-by-day contact with emotionally disturbed people, he is quite aware of the extent of emotional disorder and the severity of personality disorganization that is entailed; and consequently often skeptical of those who talk glibly of preventive mental health. The clinician cannot help thinking at times that attempts at prevention are only dishonest escapes from the realities of clinical practice, attempts to say that we will no longer be concerned about the shortage of treatment facilities and the inadequacy of present treatment methods, but instead look away towards some grand hope such as the prevention of mental disorder. The practicing clinician is entitled to a certain arrogance, by virtue of the trials and frustrations that he must suffer at the hands of his patients day in and day out; those who talk expansively of preventive psychiatry are often quite vulnerable targets for his scorn.

Author's Doubts

This paper is in essence, then, a monologue, the expression of struggle and of continuing doubts within me, as I try to use my clinical treatment orientation to move towards a concept of prevention. This conceptual task is particularly urgent in the field of university mental health, where I devote most of my time and energy, and where the focus must be on the preventive function of early casefinding and prompt therapy.

When we speak of preventive psychiatry, then, what are we speaking of? Are we preventing mental illness? (And if so, what is mental illness?) Or, are we promoting positive mental health? (And if so, what is positive mental health?) What do we really mean when we speak of preventive mental health, how may we define it for the purposes of our discussion, how might we begin to think about possible approaches to this problem? Certainly it is not enough to append the word "preventive" to a paper or a discussion to make it an example of genuine preventive work. The problem of semantics is always with us, popular euphemisms forever plague the behaviorial sciences, and certainly the word preventive will crop up more and more in the literature as it becomes an increasingly stylish concept. (An example of this is a recent article which proports to be a report of "Preventive Psychiatric Work With Mothers," but is in effect only a report of a casework process with mothers of young disturbed children.[1])

Prevention of Recognizable Disorders

At the risk of being chided by those who are foursquare for "positive mental health,"[2] I have adopted a perhaps somewhat constricted frame of reference, similar to that used by Caplan in a recent article in *Mental Hygiene,* and have defined the focus of preventive psychiatry as "the prevention of recognizable mental disorder." This really does not simplify the problem too much, since as clinicians we are quite good at recognizing mental disorder, and some surveys have shown as high as 80 per cent of a randomly selected population to be "emotionally ill." Various studies of the degree of illness in the population are available, and while none of them entirely tells us how many people are "really" ill, they do suggest some need for redefining our criteria of health and illness, perhaps in the direction of a somewhat less rigorous definition of mental health.[4-6] For the purpose of this discussion I would prefer to limit the concept of recognizable mental disorder as including conditions which result in psychiatric hospitalization, varying degrees of social pathology (such as alcoholism, inability to work, addictions, etc.) severe impairments in inter-personal relationships, severe impairment in ability to adapt to the demands of reality in the frame of reference of one's culture (which do not require hospital treatment, but do set the individual off as being "different" from other members of their culture) and such extreme evidences of despair as suicide. Even such a constrictive definition of mental illness would lead to no shortage of patients or plethora of treatment facilities, as is by now well known.[7]

This paper was presented at Meeting of Community Mental Health Centers, Topeka, on January 22, 1960.

Doctor Whittington is director of the Mental Health Clinic of Student Health Service, University of Kansas, Lawrence.

The Model of Preventive Medicine As Applied to Psychiatry

Since we need some general scientific model to follow in discussing preventive psychiatry, I have adopted that of the classical public health concept of preventive medicine, which may be represented diagrammatically as follows:

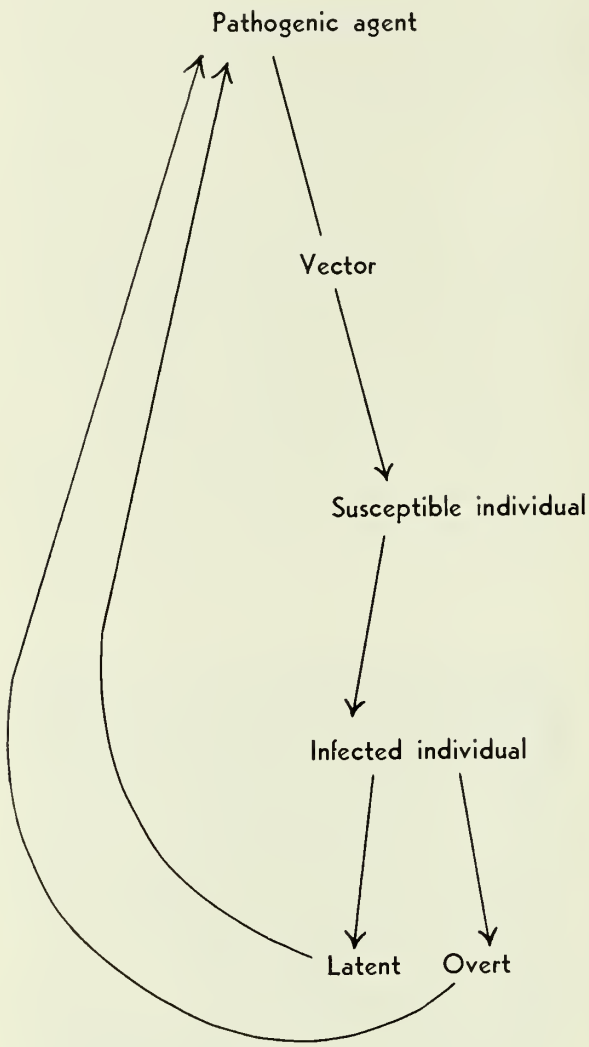

Figure 1

In addition to this model *(Figure 1)*, we have to imagine all of these interacting forces as being set in a larger milieu: that is, we have to introduce also the concept of ecology in our discussions of illness and health, considering ecology both in the biological and the sociocultural frame of reference. In discussing each of the sections of this model in turn, I will give some examples of advances that have already been made in preventive psychiatry, as well as conceptual and action problems that remain to be solved, and will then go on to a further discussion of current thinking about prevention.

Elaboration of the Model

A. Pathogenic Agents

In discussing the agents that lead to what is commonly called mental disease, we immediately fall back upon the archaic but nonetheless operational distinction between organic and functional causes.

1. Organic causes

Nutritional effects upon mental health have only been discovered in the last few decades. As recently as 1912, a commission studying the problem of pellagra in the southern United States reported, "It is probably a specific infection, communicable from person to person, by means at present unknown." The hospitals of the south were full of patients who presented the classical syndrome of dermatitis, diarrhea, and dementia, which in 1914 Goldberger first demonstrated to be a dietary deficiency. As recently as 1912 then, the etiology of a disease which caused mental aberration was completely misunderstood; this perhaps suggests that the findings of some of our various commissions at the present time on diseases much more prevalent and much more puzzling than pellagra, such as schizophrenia, may prove equally ludicrous a few years from now.

Infectious causes of mental illness are often considered as unimportant by us today, since we have grown rather lulled by the concept that anything we can catch, modern medicine can cure.

1. Syphilitic brain disease, which in the past afflicted so many of the patients in our mental hospitals, is today a medical oddity in this country, and in the civilized nations of the world, because of an enlightened battle against syphilitic infection that has been increasingly successful since the advent of penicillin. Like the previous example, however, *prevention was not possible until the etiologic agent had been discovered.*

2. The encephalitides are known to be endemic among animals in many parts of the country, and epidemics of human infection also occur sporadically. In 1958 over 100 cases of definitely diagnosed viral encephalitis were reported in Kansas. Survey of a "normal" population in the western part of Kansas disclosed serologic evidence of infection within three years in 24 per cent of those tested.[8] This is an example of an illness in which the epidemiology is fairly well known, the characteristics of the pathogenic agent are reasonably well elucidated, but where preventive efforts have not been outstandingly successful. The diagnosis of post-encephalitic brain disorder is not common, and yet I am sure that we label as such only a small percentage of children who undoubtedly have some mild organic brain damage as a partial etiological factor in their emotional problem at the time they are seen at our clinics. In other words, viral encephalitis is probably of more significance than usually recognized among our patient population. The

disease itself, if any real awareness of the importance of control were aroused publicly, could be attacked successfully at two points: by controlling the disease among domestic animals, and by destruction of the mosquito vector.

Encephalitis is a common complication of the childhood exanthema, such as measles, and also of mumps, influenza, and various other febrile diseases. A recent study has demonstrated the high incidence of clinical and electroencephalographic evidences of encephalitis during the course of measles.[9]

Traumatic causes of organic brain impairment are more prevalent today than in any previous society. There are three main types of injuries which are at least partially preventable.

1. Traffic accidents are the primary cause of traumatic brain damage as we see it clinically, and it would be a mistake to minimize the importance of this syndrome. Even in a University Mental Health Clinic, organic brain damage plays a significant role in the emotional disequilibrium of some patients; we tend to believe that one would not see "people like that" in the university population.

The prevention of traffic accidents and the minimizing of injury from such accidents is a problem that I suppose is really beyond the competence of mental health personnel to deal with, except to add our voices in urging that repeated traffic violators be taken off the highways. A general rule of human behavior that behavioral scientists do agree about, and should try to pass on to society in whatever way seems appropriate, is that the best predictor of future behavior is past behavior, and that no amount of fuzzy-brained good intentions or kindliness is likely to change an habitual offender, no matter what the offense, into a law-abiding citizen.

2. Birth injuries are of course a frequent cause of brain damage. Sometimes this is quite evident as in cerebral palsy, but often motor areas are not involved and the impairment instead is one in the ability to adopt the abstract attitude. We do not really know at this point how common brain damage is, or how important it is in limiting coping ability among our patients. The kind of longitudinal large sample studies from the moment of birth up through childhood are just now beginning at several centers, and it will be some years before we have the kind of definite data that we need to think in terms of preventive measures aimed at minimizing intracranial damage during the process of birth.

3. Athletic brain injuries continue to occur every year, and cause occasional brief furors in the press. Present-day athletic equipment for football is quite an improvement over earlier protective equipment, but nothing can prevent the kind of small hemorrhages within the brain that a sudden deceleration upon body contact is bound to produce. Boxing injuries are of course only a minor factor in organic brain damage, on the statistical average, and whether one approves or disapproves of boxing is perhaps a personal preference rather than a scientific concern.

The processes of aging are being studied from many aspects at various centers about the country. Studies of senile brain disease will undoubtedly be very common in the V. A. settings over the coming decades, as the V. A. population continues to age. The widespread interest in atherosclerosis, and the extensive and elaborate research that is being done in this field offer hope of some better understanding of the degenerative changes that occur in blood vessels and lead to the small strokes, with the attendant organic brain impairment leading to many of the depressions and confusions of later life, and which account for such a large number of admissions to our mental hospitals. As far as reducing the load on the mental hospital, and allowing it to devote its efforts towards active treatment of young people, nothing could be of more help than methods to control or at least minimize the incidence of atherosclerotic and senile brain disease among our aging population.

Endocrine disorders can result in abnormalities in emotional and mental functioning. The work of Selye on the general adaptation syndrome, and on the diseases of adaptation, outline what is essentially a unitary concept of illness, closely parallel to Dr. Karl Menninger's recent thoughts on the unitary nature of mental illness. Current research interests in the physiological indicators of emotional disequilibrium are too numerous to document.

2. The Functional, Psychological, or Interpersonal Etiologic Agents of Mental Disorder.

The family has long been recognized as of great importance in determining the *emotional equilibrium of children*. There is an increasingly voluminous literature studying the family dynamics of those families who have produced patients that have been labeled schizophrenic.[12-14] Almost all of them tend to show definite abnormalities in the patterns of interaction and in the interplay of affect; disturbances in the communication; and have demonstrated the importance of the symptomatology of one member in maintaining the equilibrium within the family unit. However, results have been reported, for example, showing no differences in the attitudes of the mothers of organically brain damaged and schizophrenic children, so long as the degree of pathology is kept constant.[15] Also, in a recent article Goldstein has challenged the concept of infantile autism as a psychogenic condition, and instead describes it as an organic brain impairment, resulting in an inability to adopt the abstract attitude.[16] So, even in this area we are forced to say that findings are contradictory, or more accurately, to say that they are complimentary, and that we are forced to think in terms of a spectrum of causation from organic to functional.

The Community and Its Agencies.

The difficulties in studying the effect of the small family upon personality development and functioning are compounded when we move out of the family and begin to look at the community and its agencies such as the schools. We are aware that prejudice exists in many overt and subtle forms; and that in many areas intolerance of differences in ability, temperament, and interests exists and is formalized in a rigid set of expectations regarding life style. We can say that this is bad, that we do not like it, that it offends us as feeling human beings and as sensitive individuals, but we cannot really at this time say too much scientifically about the effects that such authoritarian and anti-humanistic tendencies in our communities have upon personality development and functioning.

Socio-cultural influences upon emotional health and illness have been the object of several recent studies. Results are still fragmentary and difficult to interpret. In addition to such formal studies as *Social Class and Mental Illness,* there are also numerous impressionistic studies[17-22] which suggest that our society is in a pretty sorry mess, and that the emotional ills of our citizens stem more or less directly from social pressures. Certainly there are many false gods and ideals that we chase after, but it is difficult at this point to tease out what is really pathogenic, and what is only a manifestation of a stage of transition in our culture as it grows and develops.

B. Susceptible Individuals

If we turn our attention now to the susceptible individual, we can begin to look at the factors influencing his vulnerability to pathogenic agents: the heredo-congenital nucleus of personality.

1. Hereditary influences.

The work of Kallman[23] and others in the *genetics of schizophrenia* no longer leaves much room for doubt that there certainly are hereditary influences in the schizophrenic process, or more accurately in certain instances of schizophrenic illness. We should perhaps think in terms of a variety of causation, with certain cases of schizophrenia lying at the hereditarily determined end of the spectrum, others at the psychogenetically-induced extreme.

Several examples of *inborn errors of metabolism* have been elucidated in recent years, and offer great promise as far as preventive psychiatry is concerned.

1. Phenylketonuria is a recent example of the discovery and investigation of an error of metabolism, hereditarily determined, which can be detected early in life and with proper dietary management can be controlled so that the severe mental retardation that would otherwise occur does not develop. We can speculate and suspect that this is only one of many such conditions.

2. Amaurotic familial idiocy is another example of an hereditarily determined mental deficiency, which in time may perhaps be preventable as medical genetics has more scientific facts available and is allowed by society to exert some preventive function through the maintenance of genetic registries.

3. Porphyria is an interesting example of a demonstrable abnormality in metabolism, which is often accompanied by dermatitis and varying mental and emotional disorders. A particularly clear example of the genetics involved in transmission has been published concerning its occurrence in South Africa, where it can be traced all the way back to the original Boer couple who brought the genes into the colony.[24] Again, this is an example of an area in which medical genetics, through the practice of eugenics, may some day be able to play a preventive role.

There are a whole variety of *rare conditions* with physical-mental abnormalities associated, presumably on a hereditary basis, and undoubtedly more of these will be isolated, described, and hopefully eventually prevented as the science of psychiatry progresses over the years. New techniques of investigation of human chromosomes patterns, chemical characteristics of genes, etc., promise to expand our knowledge in this area rapidly.[25]

2. *Constitutional causes of increased susceptibility of the individual to organic or psychological stress might be sub-divided as follows:*

Infectious causes of intra-uterine maldevelopment are undoubtedly very common, but definitely proven etiologies are relatively few at the present time.

1. German measles occurring during the first trimester of pregnancy causes a high incidence of mental and physical abnormalities. It seems likely that other viral diseases may also cause abnormalities in the developing fetus, and play a role in the emotional diseases of obscure etiology.

2. Congenital syphilis, once a common cause, is so rare now as to be of almost no importance.

Traumatic brain damage occurring at the time of birth, previously mentioned, may impair the coping abilities of the organism at crucial points of stress later in life.

3. It is perhaps trite and condescending to talk about *the theory of individual differences, that is the theory of basic constitution,* since it is so familiar in the many ramifications that it has appeared in the psychological literature. We have probably added little of importance since Plato commented many centuries ago that people are different and have different talents and utilize their different talents, but frequently I suppose we do tend to forget it and get caught up in all the complicated scientific mumble-jumble of vocational and personnel testing. To avoid becoming involved in the trap of such stereotypes as "vocational

aptitude," perhaps we should remind ourselves occasionally that people are different in many ways, that the concept of the "genital individual" is only a mirage after all, and that there are many paths to truth in this world, many ways of adapting to life, many ways of being normal.

C. The "Vector"

1. Person-to-person contact is the chief mode of transmission, we would assume, of intrapsychic disturbances which stem from long-standing interpersonal conflict and frustration. Emotional illness is as infectious as that caused by bacteria; illness breeds illness.

2. Socio-cultural carriers:

The communication media have been widely damned in recent years as conveying false values, encouraging violence, glamorizing crime, sexing up our society, etc. There is no disputing any of these things, but it is also wise to look at some of the positive attitudes and values that have been transmitted by these same media, and not to condemn them entirely. Many people have commented on the passivity of the ego, whatever that means, among current American youth, and while that may be due to television, I rather doubt it, but imagine that it stems from more general sociological phenomena. The comics have also come in for their share of blame, and I doubt seriously if we really know what children get out of comics.

The influence of *sub-cultural attitudes* and values upon personality development and organization, as well as on behavior, are too well known to bear discussion here. As the carrier of pathogenic attitudes, various sub-cultures are quite potent, and I suppose the major preventive efforts are being carried by our culture, as it inexorably invades the insularity of all cultural sub-groupings, and makes us all more and more alike.

D. The Ill Person Versus the Carrier

This leads into a difficult conceptual problem, since, as I have already said, we are so prone to call people ill that we find a patient behind every bush. I suppose that we might adopt society's criteria for illness, and say that a person is mentally ill when his friends, family, neighbors, and community feel that he is ill, single him out as being different from the general mass of humanity, and label him as queer, odd, sick, crazy, or whatever phrase may be used. While behavioral criteria promise more scientific exactitude, societal criteria of illness are quite functional at this stage of our preventive efforts. The concept of isolating and treating carriers as well as ill individuals has been a sound one in many fields of preventive medicine. I am rather at a loss to say anything particularly profound about how we are going to apply this concept to mental health prevention, since it is neither practically, nor I think theoretically, plausible to try to treat every mildly neurotic mother to prevent any of her children from becoming disturbed at any point during their future lives, even if we knew—which we do not—that treatment would achieve this end.

Levels of Approach to the Problems of Prevention

Now that we have looked at some things that have been done, have pointed out some problem areas, have perhaps gotten some feel for the general model, perhaps we can proceed to talk about various levels of approach to the problem, and then move on to discuss implications for action.

A. Primary Prevention

Before we talk about preventing mental illness, in the terms of absolute primary prevention, perhaps it is not amiss to look back on some previous attempts that have been made in the field of public health, to gain some perspective and hopefully some humility and temerity. As recently as the 19th Century, the firing of cannon was widely practiced when a populace was struck by an epidemic, in order to dispel the poisonous miasma. The professional healers supported such activity, and in the noise and confusion people somehow did not notice for several hundred years that the commotion was not in the least effective.

Let us hope then, that in our efforts at prevention we do not fall into such evil ways, and substitute noise and random activity for constructive action. I believe that we cannot attempt prevention without knowledge of etiology and that attempts to do so are only a form of magic, a kind of *warding off process,* which is a little like whistling in the graveyard at night to deny one's fear. We are as ineffectual in preventing the major psychiatric illnesses (those generally grouped under the term schizophrenia) as the medical profession is in preventing diabetes, heart disease, arthritis, and cancer. Therefore, I would submit that our attempts at primary prevention are premature: that we have inadequate knowledge to really prevent the so-called functional disorders; that our declarations of good intentions are no substitute for adequate treatment facilities; and that we cannot really promise to deliver a program in preventive psychiatry at this time. What, then, can we do?

B. Casefinding

Secondary prevention is the most appropriate level at which to currently attack the problem of "preventing recognizable mental disorder." Immediately, however, we run into the bugaboo of the incidence studies, and are faced with an overwhelming number of

"cases" if we accept the criteria of some of these reports. However, if we choose a rather circumscribed population, such as that currently enrolled in the public schools, we might wonder what a soundly conceived, adequately supported, intelligently carried-out program of rigorous casefinding might accomplish. The study by Bower demonstrates that behavioral abnormalities of patients subsequently hospitalized are usually recorded in their school records; that a great source of behavioral data exists from teacher's observations that could be used in any casefinding program; and that the schools must function as casefinders whether they want the role or not.[26] The St. Louis studies, involving 30-year follow-ups of children, also suggest that school behavior is a useful predictor of subsequent adjustment.[27, 28]

At the University of Kansas we are pursuing a research program in an attempt to elaborate better methods of casefinding, while at the same time doing studies of the effectiveness of casefinding as it is presently structured in the university milieu. This is being accomplished by a retrospective study of the college adjustment of individuals who have subsequently been hospitalized, asking whether they were seen as ill while at the University and whether they were offered help while they were students. We also plan on adding a staff person whose primary responsibility will be to work with the faculty and administration in terms of understanding their role in the emotional life of their students more fully, sensitizing them to problems in their students, and supporting them in their attempts to attain more closeness with their students and to be more genuinely helpful. There is one particularly vivid example of the inadequacy of present casefinding methods at the University. This year, a student was admitted and in residence at the dormitory for several weeks before it was discovered through our screening of the medical records that he was preoccupied with homicidal ideas, and had been psychotic for many years, upon occasion to the point of being assaultive. In looking at what had happened in the dormitory, it was found that the counsellors knew all about his delusional system, had heard him talk about his thoughts about killing various people, but in their attempts to be psychological-minded and kind had explained it all away and did not take any action until we took the initiative.

We might ask here whether the treatment of patients, as it is generally practiced clinically, is in any way preventive psychiatry. I think it is, because of the infectious quality of emotional disorders; a disturbed individual gives his problems to the people about him. Whether the treatment policy that we currently follow is really effective in promoting change is moot, and some of the recent literature questions the efficacy of psychotherapy.[29-30] We all agree that the state hospital is obsolete and is a monument to our failure. The Community Guidance Clinic also is already a little bit outdated, a little bit out of step with the times, and its concept of clinical service, so little changed in 40 years, has not expanded as rapidly as it might. Perhaps the time is here for a program of more complete psychiatric care within the community, which recognizes the variety of kinds of treatment that can help different kinds of people with different sorts of problems, and that no longer stresses a particular type of psychotherapy to the exclusion of other forms of treatment.[31] Group living experiences, such as day care centers for disturbed children, and day and night hospitals for adults certainly should be a part of any really adequate community treatment resource, in addition to an inpatient unit in the local general hospital.

Implications for Action

Several thoughts come to mind about programs which can be instituted by the community mental health centers.

A. A Retrospective Study of Emotionally Ill Students

Looking back at the school behavior of students who become emotionally disturbed, as recorded on cumulative records in the schools, should be done in many communities, in order to impress the schools with the importance of their role in early casefinding. I do not have any illusion about the openness of school personnel to really using mental health principles, and realize that beneath the surface of lip service there is often a real divergence of values. I believe that a program of this sort, however, to demonstrate to the community at a local level the importance of the schools' responsibility to their students in terms of serving as casefinders, would be very helpful.

B. A Series of Retrospective Studies in Various Communities of Hospitalized Patients

A look to see the average lag between onset of their symptoms and their getting any type of help, to look at the type of help they got, to see what happened to people as they struggled with their illness and tried to get some relief of their pain, would be most helpful in beginning to understand how the network of referral and treatment agencies in a given community *actually* functions, not how it is *supposed* to function or how people think it *might* function. I think the hospitalized patient is excellent for this purpose because the names of such patients can be readily obtained from central files, and because they can be considered more or less prototypical of seriously disturbed individuals in the community, in that

they will severely test the community's resources and skill. Recent epidemiological and sociological studies of suicide show how enlightening this sort of approach can be.[32, 33]

C. A Long Way to Go

We are a long, long way from achieving the sort of integration into the life of the community that the private physician has accomplished. Adequate casefinding can proceed only when it is no more frightening to consult a mental health specialist than to take one's child to a pediatrician. Experiments in pre-school mental health check-ups have suggested that this is an excellent way to combine service and education,[34] without arousing anxiety in the community (as some educative projects have done.[35]) Only when a psychiatrist can be consulted without undue fear and with a reasonable expectation of help will the function of secondary prevention be firmly grounded and adequate to the needs of our society.

University of Kansas
Student Health Service
Watkins Memorial Hospital
Lawrence, Kansas

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Pernicious Anemia

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Actinomycosis of Ano-Rectum

Two Cases Are Reported and Discussed

JOHN G. CAMPBELL, M.D., *and*
FREDERICK B. CAMPBELL, M.D., *Kansas City, Missouri*

THIS IS A REPORT ON two cases of actinomycosis from Eastern Kansas. Both cases involved the anorectal area. One was clinically a submucus rectal fistula, the other an indefinite mass in the perianal fat.

Case 1. Mr. E. F. J., age 49; occupation, housewares dealer; resident of Eudora, Kansas. He gave a history of intermittent rectal soreness for 17 months. He refused to have the recommended surgery and for four years his recurrent abscesses were treated with antibiotics.

An acute exacerbation of the infection and increasing rectal stenosis forced his decision for surgery. He entered St. Mary's Hospital October 20, 1956. At that time he had a normal blood count, normal urine and a negative x-ray study of the chest. General examination was negative. The fistulous opening at the anorectal line posterior was still present. Induration and fibrosis had resulted in stenosis to the size of the index finger, but the mucosa was intact.

Sulfur Granules Present

The striking observation at surgery was the extensive fibrosis of the wall of the abscess cavity and associated tracts and the presence of "sulfur granules" in the purulent exudate. All tracts were opened and the wound "saucerized" as much as possible by trimming the overhanging edges and excising much of the dense scar.

The surgical therapy was supplemented by the administration of 400,000μ Procaine penicillin and 0.5 gm. streptomycin intramuscularly twice daily. Neomycin and Sulfasuxadine® were given orally.

Tissue from the surgical specimen were interpreted as compatible with the diagnosis of actinomycosis. A smear of the "granules" and purulent material showed mycelial elements of actinomyces.

Healing was slow, but there has been no recurrence to the present time.

Case 2. Mrs. B. C. D., age 56, housewife, a resident of Liberty, Kansas had noticed a mass in the left posterior ischiorectal space for the past two years. It was not tender and there was no drainage. Upon admission to St. Mary's Hospital, December 2, 1954, the examination was negative, except for the non tender movable mass six centimeters in diameter in the left posterior ischiorectal space. Incision into this mass revealed purulent material containing characteristic "sulfur granules." There was no extension to the anus or rectum. A smear of the purulent material showed actinomyces elements in the granules and exudate. The wound was saucerized by trimming the skin edges and excising the fibrous base. The surgical treatment was supplemented by administration of 400,000μ penicillin and 0.5 gm. streptomycin intramuscularly twice daily for ten days and sulfadiazine 4.0 gm. daily for 36 days. She has remained well to the present time.

The cardinal principle of treatment continues to be the excision of as much infected tissue as possible leaving open wounds for thorough drainage. The postoperative use of antibiotic therapy appears to be of distinct value.

Two discussed cases of actinomycosis involving the anorectal area, treated by this method have had no recurrence after four years.

History

The disease was long known as "Lumpy Jaw" of cattle. Bolling first reported the bovine infection in 1877, credit being given Harz for isolating, describing and naming the causative organism, actinomyces bovis. By 1885 Israel[4, 5] had accumulated and reported 38 cases of human actinomycosis. There was an apparent predilection for farmers, assumed to be from association with cattle and the chewing on wheat stems during harvest. With increased interest and knowledge of the disease, it was also found in urban dwellers.

The order actinomycetales includes actinomyces, nocardia, mycobacterium and streptomyces. They are a group of ray fungi intermediate between bacteria and more complex fungi. Their growth and staining are somewhat erratic.[6]

Actinomyces bovis, named for its production of "Lumpy Jaw" of cattle is difficult to grow and isolate in the laboratory. Cultures, when successful, may take two weeks. The usual laboratory animals are quite resistant to it. Direct stain or smear showing the mycelial elements must often be relied on for diagnosis. Some of these organisms may also fragment into rod forms and be acid fast.

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Cystic Lymphangioma (Hygroma) Within the Mediastinum

Edited by HARRY L. MANNING, M.D.

Dr. Hardin (Moderator): We have an unusual case to discuss today. May we have the history, please?

Dr. Griffin (Resident): The patient is a 65-year-old white lady who was referred to this hospital by her local physician because of the finding of a mass in the right chest on x-ray examination. The patient had no complaints referable to the right chest but had experienced rather severe intermittent, non-radiating sharp pains in the left chest during the preceding one month period, and it was because of this complaint that she had consulted her physician. Some exertional dyspnea, fatigability, and a pressure sensation in her left chest had been experienced during the last two or three years, and she had been diagnosed hypertensive about five years ago. A chest film in 1957 revealed cardiomegaly, but otherwise was negative.

At the time of admission here, the patient did not appear ill. Her blood pressure was 184/104. The heart was not thought to be enlarged, a grade II aortic systolic murmur and an ejection click were heard over the aortic area and a diastolic murmur of aortic insufficiency was heard along the left sternal border. Lungs were clear and there were no other important findings on physical examination. A number of x-ray studies were then done. Perhaps this would be a good time to have them presented.

Dr. Hardin: May we have your discussion of the x-ray findings, please, Dr. Davidson?

Dr. Davidson (Resident): Films of the chest were taken in PA and lateral views. The heart size is within normal limits. There are calcified nodes in the hilar area. A mass is present in the right medial portion of the chest, lying either just above the hilum or perhaps involving the superior portion of the hilum and lying at the level of the aortic arch *(Figure 1)*. The lateral film suggests the hilar structures are not altered. Planigrams suggest a possible connection with the hilar nodes. The mass appears to lie somewhat anteriorly and there is no deviation of the trachea. The mass is smooth along its medial border and blends in smoothly with the cardiac shadow. No alterations in density are seen within the mass. It measures approximately seven cms. in length and three cms. in width although the margins at the superior and inferior poles are indistinct. Peripheral lung fields are clear.

We also have films of an intravenous pyelogram

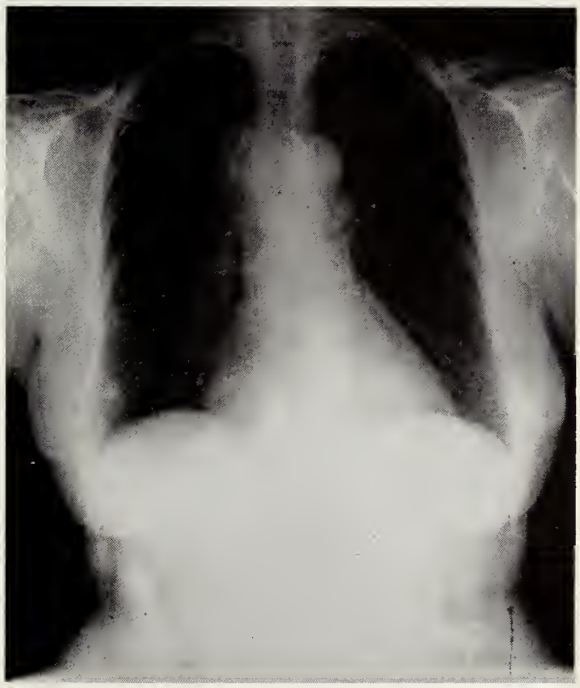

Figure 1. Roentgenograph of chest, posterior-anterior view, showing the mediastinal mass.

Cancer teaching activities at the University of Kansas Medical Center are aided by grants from the National Cancer Institute, U. S. Public Health Service, and from the Kansas Division of the American Cancer Society. Dr. Manning is a trainee of the National Cancer Institute.

study done elsewhere. This was negative. We did an upper and lower G.I. study which also were negative.

Our differential diagnosis of the mass in the right chest would include a dermoid, although the patient is somewhat older than the usual patient with this finding. We might also think of a thymoma, a bronchogenic carcinoma, or possibly an aneurysm of the innominate artery, although no calcification was seen.

Dr. Mantz (Pathologist): Does one ever see a pericardial celomic cyst this high in the mediastinum?

Dr. Davidson: Usually these cysts are located lower, below the region of the heart base, and with planographic studies, one can trace them right into the pericardium. I have never seen any this high.

Dr. Hardin: What about a reduplication cyst or a bronchial cyst; could these lie in this location?

Dr. Davidson: Yes, they are other possibilities. We might also consider an esophageal cyst.

Dr. Mantz: I would like to mention that although it would be quite unusual for the lesions of Hodgkin's disease to be unilateral, such can occur.

Dr. Hardin: What was done next, Dr. Griffin?

Dr. Griffin: A right scalene node biopsy and a bronchoscopy were performed and bronchial washings were procured for histologic examination. The node biopsy and bronchoscopy procedures were reported as negative, and the bronchial washings were reported as showing many atypical cells. A gynecologic consultation also was obtained, and no pathology within the pelvis was found by the consultant. The patient then was taken to surgery and a thoracotomy performed.

Dr. Hardin: What was the preoperative diagnosis?

Dr. Griffin: Carcinoma of the bronchus.

Dr. Hardin: What were the findings?

Dr. Griffin: The mass was a rather well circumscribed, soft cystic lesion lying in the superior mediastinum between the superior vena cava and the trachea with the azygos vein arching over it. It was easily separated from surrounding structures and was excised. The patient did very well following surgery and was discharged a week later.

Dr. Hardin: Dr. Mantz, will you discuss the pathology of this lesion, please?

Dr. Mantz: The surgical specimen consisted of an irregular, somewhat ovoid, soft, red-brown mass weighing 48.2 grams and measuring 6 x 4 x 3 cms. As you examine the specimen *(Figure 2)*, you will note that the external surface is globular and one can see in several areas what appear to be the very thin and transparent walls of cystic structures. The cut surface confirms the fact that the lesion is indeed

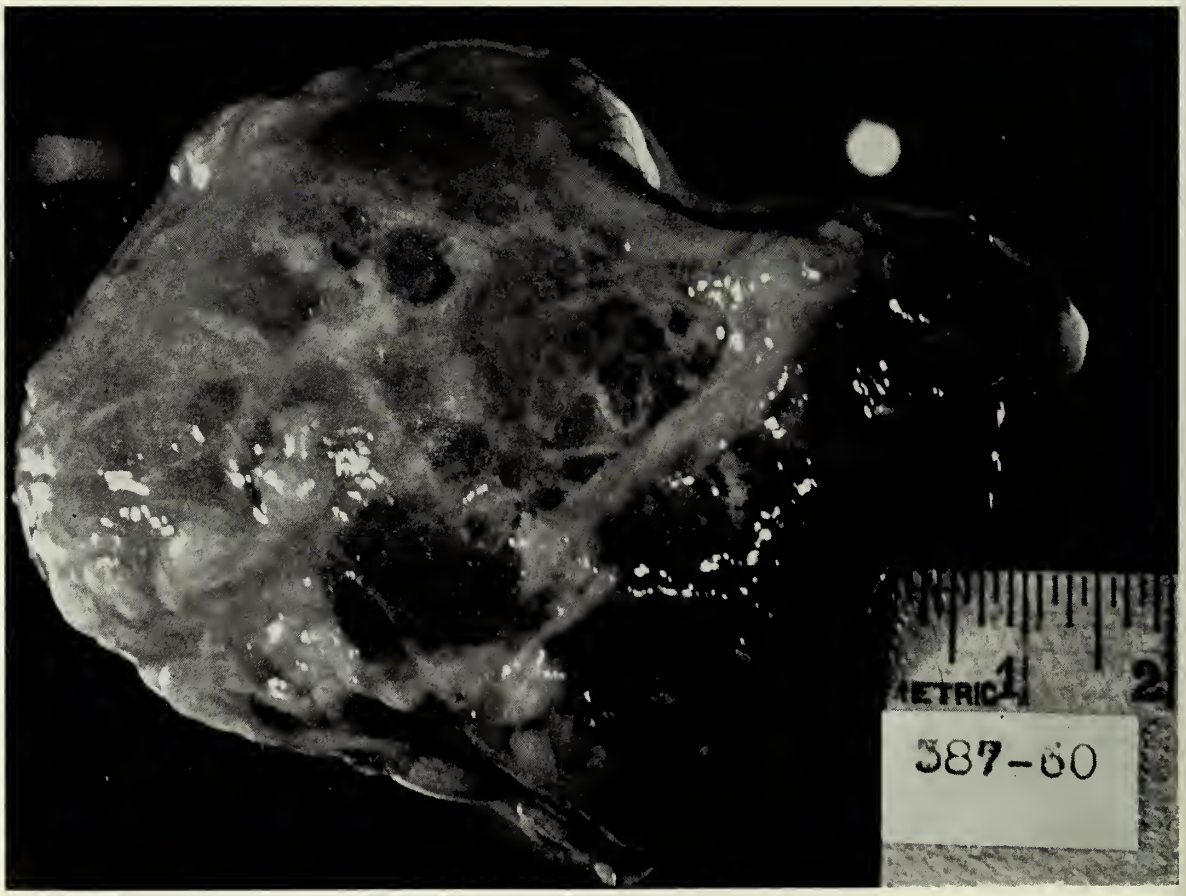

Figure 2. Gross appearance of the mediastinal lymphangioma.

polycystic. The loculations contained clear, watery, somewhat bloodstained fluid. The over-all matrix is exceedingly soft. The external surface is sharply demarcated, although a well-defined capsule is not demonstrated.

Let us turn our attention now to the histologic features of this lesion. One sees that it consists of a congery of irregular spaces having walls which are densely fibrous. Contained within the walls are rather large amounts of lymphoid tissue *(Figure 3)*. A remnant of an apparently healed granuloma is present in one area and presumably is related to the hilar calcification observed by the radiologist *(Figure 4)*. The cystic spaces are lined with a flattened layer of cells which could be either mesothelium, flattened epithelial cells or endothelium. I find it quite impossible to make definite identification on their morphology alone. It should be noted, however, that the presence of lymphoid tissue is quite outstanding throughout the lesion, a feature which I consider to be of paramount significance. The presence of a granuloma within the lesion strongly suggests that it was behaving like a lymph node, presumably draining the pulmonary area. One also finds the presence of anthracotic pigment which has the same significance.

I would like to point out one additional feature because I believe this to be a most important aspect in the differential diagnosis, that is the presence of small, smooth muscle deposits within the cyst wall. These are cells which are long and spindle-shaped. They tend to be arranged in distinct bundles and have an abundance of eosinophilic cytoplasm. This, I believe, is a hallmark of this lesion.

In view of these histologic features, we might consider the diagnostic possibilities and I believe there are three major considerations. The first is that of a pericardial celomic cyst which I think the radiologist has very well excluded because of the position

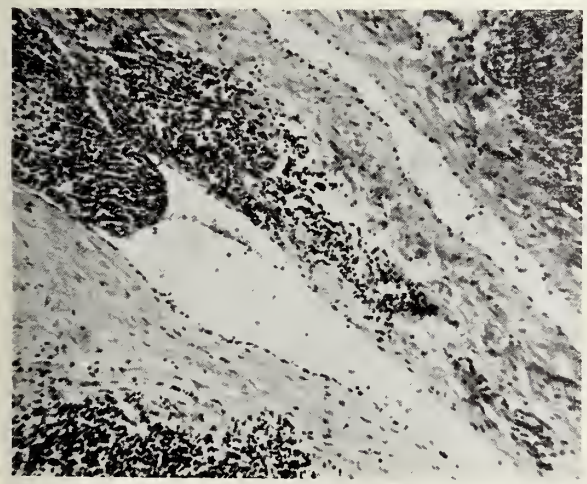

Figure 3. Microscopic appearance of the lymphangioma showing the characteristics of the cyst wall and the cells lining the cysts. Note the presence of abundant lymphoid tissue. ×-135, reduced about one-fourth.

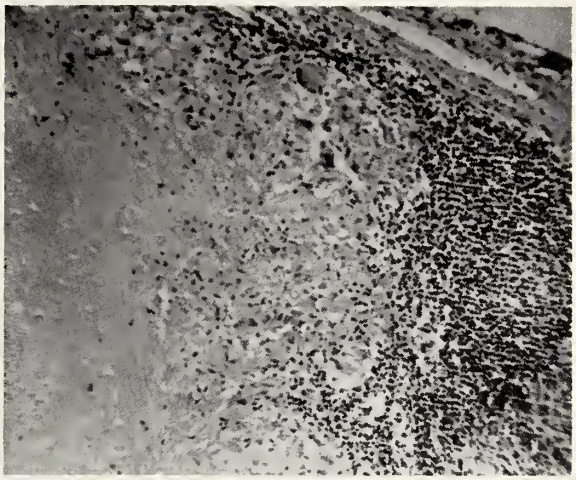

Figure 4. Photomicrograph showing a portion of the granuloma in one part of the mass. Note the giant cells at the edge of the granuloma, the adjacent lymphoid tissue and anthracotic pigment. ×-135, reduced about one-fourth.

of the lesion. One should be aware, however, that such structures do occur, are sometimes multilocular and are lined with a flattened mesothelial type cell. The second possibility for consideration would be cystic degeneration within the remnants of the thymus gland. This may not seem probable, but the epithelial elements of the thymus, manifest in most instances by the Hassall corpuscles, may undergo cystic change and become markedly flattened. Therefore, I doubt that we can exclude this possibility just on the basis of the extremely flattened cells which line the cystic spaces. The third possibility, and the one which I think most everyone would accept, is that this is a lymphatic tumor, a cavernous lymphangioma or a so-called cystic hygroma. I believe this diagnosis is established by the demonstration of smooth muscle within the tumor substance, a feature which would not be found in the pericardial cyst or in cystic degeneration of the thymus.

One is treading on rather thin ice on making such a diagnosis, since such a neoplasm is exceedingly rare in this location. Out of 109 consecutive cases of mediastinal cysts, reported by Blades[1] from his extensive Army experience during World War II, there was not a single instance of lymphangioma or a cavernous angioma in the mediastinal area. Nix,[8] in reporting 42 cases of lymphangiomas, mentioned none within the mediastinum. As a matter of fact, Gross and Hurwitt[4] report only 19 instances of cervicomediastinal cystic hygroma in the total world literature up to 1948 and state that the mediastinal hygroma is even more rare. Although a number have added to the literature since then, it remains a very rare lesion. Why is this a rare lesion in this location? The lymphatic system, as the vascular system in general, is derived from bundles of endothelium that differentiate throughout the body and which ultimately gain con-

fluence one with another. It is thought by many, and probably quite correctly, that the lymphatic system per se also represents budding of large sac-like structures from the venous system. This budding occurs classically in three areas, the most common of which is the cervical region, the second most common, the axillary region and the third most common, the inguinal region. These are the only common sites in which one finds cystic hygromas. The pathogenesis of this lesion in the mediastinum, then, is relatively obscure from what we know embryologically or anatomically. It is thought by many that the mediastinal lesions represent a migration downward of the budding lymphatic anlage from the cervical region into the anterior portion of the mediastinum where it undergoes growth and ultimately gains contact with the lymphatic system in general. There is some evidence for this hypothesis, inasmuch as the mediastinal lesion has not as yet been reported in the very young. The average age is about 40, although one instance of this lesion in a 13-year-old boy has been reported.[7] Gross and Hurwitt[4] point out the fact that the usual cystic hygroma in the neck occurs in the very young, the combined cervical and mediastinal lesions occur in the slightly older age group, and then supposedly after migration has had time to occur, the isolated mediastinal lesion is found in the older individuals, as in the patient whom we have the privilege of discussing today.

Dr. Hardin: This certainly is an unusual location of an unusual lesion. As mentioned, the cystic hygroma generally occurs in the neck, axilla or groin areas. The lesion is of particular importance in the small child because of its local invasive tendency resulting in extension of the lesion between structures in the neck or around the brachial plexus or in the upper mediastinum, making the surgery quite time consuming and the lesion often quite difficult to completely remove. The treatment of choice in these lesions is generally considered to be surgical excision which should be done very early because of the airway problem and because the longer the lesion is left in place the more invasive it becomes. One should also keep in mind that since this is a derivative of lymph channels, there is communication with the superior venous system and, therefore, the injection of any sclerosing substance into the lesion certainly is fraught with danger, because a thrombosis of the innominate, subclavian or superior vena cava could then result.

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Actinomycosis of Ano-Rectum

(Continued from page 512)

Actinomyces bovis is most constant in its filamentous growth. In this form it produces mycelial clumps which are most characteristic. These minute yellowish clumps are called "sulfur granules." They are easily distinguished in the exudate of draining sinuses and abscesses.

Actinomyces bovis is often saprophytic in man. One common site is carious teeth and it may be found throughout the ora-pharynx and respiratory passages. Trauma seems to be a pre-requisite for entry into the tissues. According to Smith the rate of involvement of different areas are, cervico-facial 50 per cent, addominal 20 to 30 per cent and thoracic 15 per cent. After penetration, spread is by direct extension, there being little evidence of hematogenous spread. The amount of spread depends on the virulence and host resistance. The typical course is abscess formation, fistulization, and granuloma. In the chest this may simulate tuberculosis. The usual limiting membranes are no barrier to extension.

The early treatment was wide surgical excision, supplemented by oral administration of potassium iodide and x-ray therapy. The broad spectrum antibiotics have been a distinct advance in therapy with improved cure rate. Sensitivity tests can be run on cultures to determine the most effective drug.

1210 Professional Building
Kansas City 6, Missouri

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Student
THESIS

The Oral Method of Contraception

STANLEY D. KERN, M.D., ***Kansas City, Missouri***

THE PURPOSE OF THIS PAPER is the discussion of the rapid population growth, the need for its control, and a brief survey of religious and moral attitudes on conception control. The mode of action and future effect upon the human female reproductive system of three synthetic steroids and one unrelated non-steroidal substance when taken orally is presented.

> "Control by men and women over the number of their children is one of the first conditions of their own and the community welfare, and in our view mechanical and chemical methods of contraception have to be accepted as part of the modern means, however imperfect, by which it can be exercised." Royal Commission on Population, 1949.

Population Boom

Medical science by its continual efforts in saving and prolonging life has been a major factor in the rapid and increasing growth of world population during the last 100 years. Many people feel that the medical scientist has thereby incurred a heavy responsibility for the dangers from this growth. Among the problems is that of perfecting some acceptable and effective method of controlling human fertility. The answer lies in the field of birth control. The medical scientist must and can do something to restore the balance of life and death which has been offset by so called "death control" by searching for a practical, acceptable, and economical method for controlling the mechanism of reproduction. It is logical that a route be sought which will utilize the knowledge of the physiology of the reproductive processes.

It is generally agreed that present methods of contraception depending on the use of mechanical obstruction and spermicides are useful only when faithfully and intelligently employed. Without a doubt this leaves out a vast segment of the world's population either because of neglect, unconcern, irresponsibility, or lack of intelligence.

Even a casual knowledge of human physiology is sufficient to suggest that in this area lies the eventual answer to this fundamental problem, but as yet physiological control of conception has remained almost totally unexplored. This is in part due to lack of interest but of much more importance, has been the taboos imposed by religious and cultural groups.

Ideal Contraceptive

Let us look at the criteria of an ideal contraceptive and discuss the attributes of certain oral compounds used to control fertility. Millman and Hartman discuss the criteria of an ideal contraceptive in the following manner:

FUNCTIONAL—NECESSARY FOR USE

1. Safety—The given drug must have minimal toxicity and irritation with a high therapeutic index. It must have minimal side effects, and it must not be cumulative or abortifacient.
2. Effectivity—This must be demonstrated in actual tests.
3. Rapid action.
4. Rapid reversibility—It must not disrupt the

This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be best by the faculty at the school. Dr. Kern is now at the St. Lukes Hospital in Kansas City, Missouri.

complex balance system of functions of the body. It must not depend closely on physiologic timing because of the variability from person to person.

Non-Functional—Not Absolutely Necessary but Determine the Acceptance and Availability of the Product

1. Low cost—Medication must be available to all social economic classes.
2. Acceptability—Namely in taste, odor, and size.
3. Purity—The medication must be pure and reproducible.

The biological requirements of an ideal method of preventing conception should be effective over a known period of time and should be simple enough to be generally available and easily usable to any people intelligent enough to understand the possible consequences of the coital act and to know whether they wish to conceive. Contraception should involve only occasional dosage by mouth and it should certainly not depend on local action contemporaneous with coitus. It should have no effects other than the prevention of conception. Tyler and Olson state that the effectiveness of any such drug not only depends upon its biological effectiveness in not permitting fertilization of an ovum or even not permitting ovulation to occur, but it must of necessity be acceptable to the public. Without a high index of acceptance these drugs, no matter how effective, will not be used, and of necessity these drugs' effectiveness depends upon their constant and regular use.

In order to evaluate the effectiveness of a contraceptive method Tietze distinguishes three levels, *i.e.:*

Physiologic—This is a measure of the protection afforded under ideal conditions which are rarely present. The method when measured in this manner only should be the most effective.

Clinical—This equals "use effectiveness," that is with more or less consistent use and with more or less care and skill. The rates of effectiveness in this group are higher among intelligent people, higher in cities than rural areas and higher among those seeking advice as compared to those not seeking advice. It is related to motivation.

Demographic—This is more inclusive and reflects clinical effectiveness plus all of those factors which may promote or discourage continued reliance on a certain method.

It is known that couples who rely on a given contraceptive method for a long period have less pregnancies than a group using the identical method with the same skill but for a shorter period.

Pregnancy rates of about 80/100-woman-years of exposure are common in the United States without any means of contraception. In measuring the efficacy of a contraceptive method Stix and Notestin express the number of pregnancies with a period of contraception to that expected without contraception respectively: 4/100-woman-years to 80/100-woman-years or 76 out of 80 pregnancies have been prevented or it is 95 per cent efficient. A study conducted in Indianapolis by Westoff concerning the effectiveness of various conventional contraceptive devices gives a rate of 12/100-woman-years with the lowest rates in the highest socio-economic groups. The lowest rates with the following devices were in the following order: (1) diaphragm and jelly, (2) condom, (3) withdrawal, (4) douche.

It is of importance at this point to look at the position of certain religious faiths on this matter and by this determine if this method is acceptable to their basic tenants concerning this matter.

The Methodist Church "We believe that planned parenthood practiced in Christian conscience may fulfill rather than violate the will of God."

The United Lutheran Church "Husband and wife are called to exercise the power of procreation responsibly before God. This implies planning their parenthood in accordance with their ability to provide for their children and carefully nurture them in fullness of faith and life."

The Congregational Christian Churches "We favor the principle of voluntary childbearing believing that it sacramentalizes physical union and safeguards the well being of the families and society.

The Protestant Episcopal Church "We endorse the effort being made to secure for licensed physicians and medical clinics freedom to convey such information as is in accord with the highest principles of eugenics and a more wholesome life."

The Catholic Church Pope Pius XII stated in his last message to physicians, "The Church disapproves of every experiment of genetics which would make light of the spiritual nature of man or treat him on a level with any member of the animal species."

Direct sterilization, that is, sterilization with the intention either as a means or as an end of making procreation impossible is a grave violation of the moral law and therefore illicit. Regarding the use of pills and remedies to prevent ovulation, he asks if it is licit to prevent ovulation by means of pills used as remedies for excessive reaction of the uterus and of the organism, even though this medicament by preventing ovulation also makes conception impossible. The answer depends on the intention of the person. If not taken to prevent conception, but on the advice of a physician as a remedy for a disorder of the uterus or organism, the indirect sterilization caused would be permissible. A direct sterilization is accomplished and therefore illicit when one prevents ovulation in order to preserve the uterus or organism from the consequences of pregnancy which could not be borne.

It was the will of the creator that the human race should propagate itself precisely through the exercise of the sexual function. "Man does not have the right

to dispose of his own body." The Catholic Church will never endorse artificial contraception because this violently frustrates nature's most sacred act. The Church does look with sympathy on the family which has serious reasons to limit the number of children by abstinence, periodic, or sustained.

Regarding overpopulation and birth control the Church believes when this condition exists many families will have sufficient serious reasons for the use of periodic abstinence, thus, growth of population will be impeded as a by-product. But it believes this is not the ideal situation. It desires that men so activate national and international factors of production as to provide ample scope for family expansion. Since the presence of numerous offspring corresponds with man's nobler aspirations, spouses should remain at the service of life generously even at the price of considerable hardship.

It is the Church's general opinion that if all the land on the earth was intensively cultivated it could support ten times the present population or approximately 28 billion people. It is also their opinion that birth control is a clumsy, slow, ineffective, uncertain, inhuman, unnatural, and immoral method of solving overpopulation; whereas good business, good politics, and Christian virtue are superior in every respect. Therefore, to this group the threat of overpopulation is a product of idle speculation rather than of reasoned thinking.

However, on the contrary, Pirie states that people could achieve whatever level of population they wished if they were informed about contraceptive techniques and had all the necessary equipment.

Realizing that contraception of any form may not be the total answer to the problem of overpopulation and that a large group of the world's population belongs to the religious faith which frowns upon such practice, let us examine one proposed method for fertility control, *i.e.,* that of cyclic oral consumption of agents which affect ovulation.

Three Synthetic Steroids

The following discussion is limited to three synthetic progestational steroids and m-xylohydroquinone, which is questionably a progesterone or estrogen inhibitor.

In the last few years there has been renewed interest in compounds with high progestational activity which show oral potency and prolonged duration. They are the 19-nor steroids. These have been used quite extensively in animal experimentation but of much more importance, they have been studied by numerous investigators with regard to control of conception and their future effects upon the human female endocrinology and reproductive organs.

In 1951 the Syntex laboratories synthesized the appropriate aromatic progesterone derivatives and converted it into authentic 19-nor progesterone; the stereochemistry of which was identical, at all relevant centers, with that of the natural hormone, progesterone. Consequently in 1954-1955 the synthesis of 19-nor analogues of all the important steroid hormones was completed. These derivatives are termed "19-nor" because they lack the carbon number 19 of the progesterone molecule.

The ovulation inhibiting quality of progesterone has been appreciated for about 20 years, and since its isolation in 1934 by Allen and Wintersteiner it has been used as the agent of choice in ovarian and menstrual disorders. The only effective route has been parenterally because of the decrease in activity when given orally. Due to its limited solubility in oily vehicles and painful local reaction on injection of the crystalline suspension an orally effective progestational agent would have many more uses. With the discovery of the synthetic 19-nor derivatives the effects of these agents on reproduction in the female can now be studied.

Criteria for Ovulation Detection

The criteria for the detection of ovulation in the absence of pregnancy is difficult but in the studies reviewed the usual criteria were:

1. A recorded increase in basal body temperature day by day.
2. Progestational changes in endometrium, namely glands, stroma, and vessels.
3. Examination of vaginal epithelium for an elevation in the ratio between mature cornified cells and less decadent forms.
4. Urinary pregnanediol increase.

These objective signs, when used as indicators of ovulation depend on the effect of endogenous progesterone. If the condition found in the individual's test was typical of a normal non medicated cycle it was attributed to ovulation and the test was considered positive and thus due to endogenous progesterone rather than to administered steroid.

Discussion of 1st Criterion—Basal Body Temperature

All the patients in the studies carried out by Pincus were carried on a 10 mg/day dosage of the steroid started on day five following menstrual flow and continued until day 25 of the cycle. This period of medication covers up to 98 per cent of possible ovulation times and assures an approximate normal length period by withdrawal bleeding in 2-6 days following cessation of medication. Without exception the waking basal body temperatures were elevated beyond the usual normal level with intrinsic progesterone one to two days after starting the medication. This elevation was about seven days before a corpus luteum begins to function in normal cycle. In four of nine cycles menstruation failed to occur on cessation of medication with norethindrone although the temperature fell to the normal level When such a

drop is due to luteal regression menstrual flow "always" occurs. This is interpreted as absence of ovulation.

Discussion of 2nd Criterion—Endometrial Changes

The next criteria considered for the detection of ovulation is the examination of endometrial biopsies at different periods during the medicated cycles.

In a large group of Puerto Rican women taking norethynodrel 10 mg/days five to 25 (the S-J series) Pincus noted normal secretory endometrium in the first few days following initiation of medication but in later days showed a characteristic pseudodecidual reaction. In four of five patients taking the medication for four to seven days a positive diagnosis of ovulation was made. In no patients however, who took the medication for 12 to 22 days could a positive diagnosis of ovulation be made.

After seven days of medication the endometrium showed shrunken, secretorily exhausted or regressing glands. The stroma was highly stimulated and maintained throughout the medication. Early in medication the glands are suggestive of five-day postovulatory glands with a vacuole material discharge but they remain of proliferative caliber, being straight or only slightly ribboned, approximately like normal 19-day glands. With continued medication the response only rarely and in a few glands progresses to actual secretion into the lumen which is characteristic of the seventh postovulatory day. The glands do not increase in size or change in shape as do postovulatory glands; instead they appear to gradually regress on continued medication. With further treatment their lumens become narrow; the epithelium becomes cuboidal as in the early proliferative phase and after 20 days of medication they resemble five-day glands of the normal non-medicated cycle.

Edema Seen

Edema of the stroma which is the functional layer of endometrium appears in the first few days of treatment, and this is seen normally in the non-medicated cycle about day 21. Normally this edema begins to subside about the seventh postovulatory day but with medication the edema persists until day 26 of the cycle or the 21st day of medication. A predecidual cytoplasmic enlargement of stroma cells begins about day 12 (seventh day of medication) and progresses rapidly so that on the 16th day of medication it resembles that of day 26 of the normal non-medicated cycle. On the 17th day of medication or day 22 of the cycle the stroma closely resembles that of early pregnancy and is misleading even to seasoned pathologists.

When medication was started at mid-cycle the glands appeared arrested at the late proliferative phase, dilated and cystic. The epithelium was flattened because of intraluminal pressure; the stroma was edematous; there were no blood vessel changes. When the dosage was increased to 20 mg/day there was edema of the stroma and a greater amount of secretion was noted.

Hartman and Bartelmez noted that these superdecidua and an abundancy of mitotic figures which are noted in these stroma might be a deterrent to the use of these agents as oral contraceptives. As the number of mitoses decreases in glands they increase in frequency in stroma during the luteal phase. This presents the possibility of a woman going into labor to deliver a decidual cast.

Hertz has noted varying degrees of metaplasia and cellular disorganization of endometrial stroma in monkeys after 140 days of continuous medication with these steroids, he hastens to add however, the intermittent administration may well be free of this hazard.

Rock states that after medication for three to four cycles the infrequency of mitoses resembles the situation in the normally ovulating patient.

The frequency of breakthrough bleeding appears to be closely related to the amount of estrogen, intrinsic or extrinsic, in the compound. The frequency of side effects is also directly related to the amount of estrogen in the progestation agent.

When norethynodrel which was free of estrogenic contaminant was used in 10 mg doses from day five to 25, there was breakthrough bleeding in 75 per cent cycles. The mean cycle length was 24.2 days and the percentage of reactions was 8.3 per cent. When the dosage was increased to 20 mg/day, the percentage of patients who experienced breakthrough bleeding decreased. The mean cycle length was 26.3 days, but the percentage of reactions significantly increased.

Breakthrough Bleeding

In the Puerto Rico (S-J) series patients were considered to have breakthrough bleeding if menstruation occurred before day 24 of any particular cycle. These patients were given varying amounts of estradiol methyl ether (EME) along with 10 mg of norethynodrel daily. There was no difference in side effects noted on the varying levels of estrogen, and the percentage of side effects did not differ significantly from merely doubling norethynodrel dosage to 20 mg/day; however, in 157 patients given 0.08 mg EME seven per cent bled before day 24. One and six tenths per cent of the women had breakthrough bleeding when given 0.15 mg EME and 2.9 per cent bled early on 0.18 mg EME. Increasing the estrogen to 0.20-0.44 mg/day and the steroid to 20 mg/day decreased the incidence of breakthrough bleeding and side effects but not significantly. These studies suggest that one woman in 50 taking norethynodrel plus 0.15-0.18 mg EME will have withdrawal bleeding.

In this same study Dr. Pincus investigated the effect on breakthrough bleeding when tablets were

not taken regularly. One thousand, seven hundred and twelve cycles were investigated in 165 women. In 1279 cycles all tablets were taken regularly. In these a monomodal distribution of cycle lengths was noted with the average cycle being 27.86 days. In this group 3.5 per cent of the cycles were complicated by breakthrough bleeding. In 282 cycles one to five tablets were missed and in these patients there was a bimodal distribution of cycle lengths at 19 to 23 days and at 31 to 32 days. Forty-two and two tenths per cent of these cycles were complicated by breakthrough bleeding. In 151 cycles six or more tablets were missed. These patients showed a bimodal distribution of cycle lengths at 19 to 23 days and at 33 to 36 days. Nine and nine tenths per cent of these patients experienced bleeding before day 24.

When all tablets are taken the occurrence of breakthrough bleeding is less than in normal cycles. This is possibly not breakthrough bleeding but a manifestation of endometrial threshold response. When tablets are missed this is most likely true breakthrough bleeding.

The group which missed one to five tablets had an early bleeding incidence of 42.4 per cent due to inadequate endometrial support by medication. The second mode of bleeding at 31 to 32 days represents adequate sustenance of the endometrium despite the omissions until the 20 tablets had been taken.

Those who missed six or more tablets experienced longer cycle lengths and less frequent withdrawal bleeding. This possibly represents women with a low endometrial response threshold in whom the 10 mg dose carries over more easily.

In this study all three compounds used exerted practically the same endometrial effect between day 18 to 24 of a medication cycle *i e.,* stimulation of stromal development accompanied by glandular exhaustion or regression. There were a few cases of breakthrough bleeding with norethindrone and norethynodrel at doses of five mg/day or less and a larger percentage of early bleeding with norethandrolone at doses of 10-50 mg/day. The inability of norethandrolone to sustain endometrium in high dosages suggests a certain amount of estrogen is required Norethandrolone® has been shown to have an antiestrogenic action on target tissue in animals. It has been shown that norethynodrel has a certain amount of intrinsic estrogenic activity and norethindrone and norethynodrel have had a small amount of detectable estrogenic contaminant.

Norethynodrel orally produces a progestational response in the estrogen primed rabbit. It has a low but definite inherent estrogenic activity and this prevents the full manifestation of the potential progestational effects. Estrogen priming is necessary for progestational response but when administered concurrently the response to progesterone is inhibited.

Pincus, *et al.* noted breakthrough bleeding to be less frequent in all cases when these compounds were used with estrogen. He also noted breakthrough bleeding was more common in the first cycle of medication. A higher dosage of norethindrone was required to control breakthrough to a level comparable with norethynodrel plus EME.

Discussion of 3rd Criterion—Vaginal Epithelium

Ferning Effect

The detection of ovulation by examination of vaginal desquamate and observation of the "ferning" effect revealed ovulation in four per cent of those on medication. The non medicated control group was 97 per cent positive for ovulation. In 15 per cent of the medicated persons the test was equivocal. Eighty-one per cent showed no evidence of ovulation.

Discussion of 4th Criterion—Pregnanediol Excretion

The fourth criterion by which ovulation was determined is the measurement of urinary pregnanediol excretion. When estrogen or progesterone is given in sufficient quantity during the menstrual cycle, the resultant inhibited pituitary gonadotropin production may prevent ovulation in that particular cycle. The Population Council, Inc. of Los Angeles embarked on a study in 1956 for the investigation of the physiologic effects of these drugs. It was concluded that pregnanediol excretion is a valuable adjunct to evaluation because the exogenous progesterone is not metabolized and excreted by the same pathway as endogenous progesterone. The results of this investigation are seen in *Table I.* The steroids were given from day five to 25 of the menstrual cycle in 10 mg doses. Seventeen ketosteroids and pregnanediol were measured on days 19-22.

In the normal non medicated cycle pregnanediol excretion in the preovulatory period is 0.39 mg/24 hrs. Following ovulation there is a five-fold increase. There is insignificant change in the 17 ketosteroid excretion. Preovulatory pregnanediol excretion is comparable to that of the latter one-half of a medication cycle.

Following ovulation six patients received norethindrone or norethynodrel and the mean pregnanediol excretion was 1.15 mg/day rather than 0.25 to 0.35 mg/day as in those medicated from day five to 25. This 1.15 mg/day is significantly less than the normal luteal phase excretion of 2.05 mg/day. At this level (10 mg/day) these steroids do not decrease corpus luteum secretion. It is suggested by the author that the low pregnanediol level from days five to 25 with medication represents an absence of corpus luteum formation by absence of ovulation rather than inhibition of secretory activity. Pregnancies have occurred and continued in women with postovulatory medication even though pregnanediol excretion is decreased by one-half.

TABLE I

Medication	*No.*	*Basal Body Temp.*	*Endo. Biopsy*	*Vag. Smear*	*17 Keto-steroid*	*Pregnanediol*
None	56	95	98	89	6.98	2.06
Norethindrone	21	5	0	0	7.16	0.33
Norethynodrel	36	0	3	7	5.88	0.31
Norethandrolone	17	6	0	11	4.50	0.34
		Per cent positive for ovulation by these tests			mg/day	

Male Hormone Inhibitor

Norethindrone's antigonadotropic activity has been shown by a reduction of weight of the seminal vesicles in mature male rats. In the mature male rats the development of prostate and testes was partially to completely inhibited. In the intact female rat anestrous occurred during treatment. With doses of 0.5 to 8 mg. daily the inherent androgenic action on the target organs counteracted its pituitary inhibitory action.

Norethynodrel inhibits ovarian weight by depressing secretions of pituitary gonadotropin. Hypophysectomized rats given pituitary gonadotropin and norethynodrel concurrently had no change in ovarian weight, therefore norethynodrel did not inhibit the action of the gonadotropin, but instead inhibited production of it.

Males medicated with norethynodrel experienced stunted body growth while controls continued to grow, but one month after stopping medication all weights were equal. Testicular, seminal vesicle and prostate atrophy returned to normal one month after stopping medication.

In the female there was ovarian atrophy but no effect was noted upon growth. Uterine weight was maintained which indicates the inherent estrogenicity of the medication. Within one month after stopping the medication ovarian weight was back to normal and subsequent breeding studies show that the ovaries' function was maintained. Juvenile female rats showed minimal effects with little decrease in body weight. Ovarian weight decreased with increased dosages but uterine weight was not depressed.

Norethynodrel in this study was supposedly not contaminated with estrogen but the intrinsic estrogenicity of this compound might be the cause of the pituitary gonadotropic inhibition. Norethynodrel is believed to inhibit the pituitary tropic mechanism and thus eliminate the effect of the endogenous ovarian steroids. Therefore the entire endometrial effect may be due to this agent.

The question of depression of other pituitary hormones other than gonadotropins has been raised. Pincus states that adrenal function has been thoroughly studied in persons under treatment for as long as two years. An average of ten per cent decrease in excretion of urinary corticosteroids, which are derived from hydrocortisone, was noted. However, the blood hydrocortisone level was increased. Excretion of 17 ketosteroids was 2.85 mg/24 hrs. in the medicated group and this is 33 per cent less than the value for the control group but it is not statistically significant. The medicated group's 17 hydroxycorticosteroid was 38 per cent less than control group.

This data suggests inhibition of adrenal corticosteroid with a constant lowered output level during medication. No symtomatic evidence was noted and the excretion levels do not vary with the length of medication.

Side Effects

Pincus, Rock and Garcia noted breast tenderness, nausea, vomiting, dizziness and pelvic pain to be the primary and most frequent symptoms. The incidence of reactions was lowest with norethynodrel alone, but they increased when estrogen was added. A total of 390 cycles were studied in which 157 took 0.08 mg of (EME), 61 took 0.15 mg and 172 took 0.18 mg with 10 mg/day of norethynodrel. There was no significant difference in the incidence of reactions but breakthrough bleeding was increased in those that took only 0.08 mg EME. Evidently the threshold dose for these reactions is lower than that for adequate endometrial support.

Garcia noted in a survey during therapy, that few voluntary complaints were given. Two months after discontinuing medication the patients were questioned and breast engorgement fullness and tenderness were noted. A weight gain of five pounds was noted premenstrually but quickly lost after menstruation when medicated with norethindrone or norethynodel. Less weight gain was noted with norethandro-

lone but it did cause increased nervousness and irritability.

Tyler found that these compounds do have androgenic as well as progestational properties causing breast enlargement in males and deepening of the voice in women. Various degrees of masculinization were noted with continued use, *i.e.,* voice changes, enlargement of clitoris and a small vaginal orifice was noted in children. (One patient on 20 mg/day norethynodrel after 4½ months could not reach as high notes as before.) Norethynodrel's action is about the same as norethindrone except for the nausea with or without vomiting. A tolerance developed in about 50 per cent on maintained therapy. Another study by Pincus, *et al.* showed an apparent accommodation response or tolerance to medication probably involving uterine response to the level of stimulation established by the drug. No habituation was noted. Pregnancies occurred at the same rate in long term users as in short term users.

Norlutin exerted the greatest antagonism to catabolic processes during a fast and tended to be anabolic with resulting positive nitrogen balance after administration.

Jaundice developed in one patient but there was no parenchymal damage of liver on 40 mg norethindrone/day in treatment of threatened abortion. The jaundice cleared on discontinuing medication. A 3+ cephalin flocculation was noted in another. Isolated instances are unimportant but they suggest areas where difficulty could conceivably arise.

Heckel noted fewer side effects in psychotic women. Allergy is known to be less common in psychotic women, and the reactions described suggest allergy. Women who cannot tolerate ethinyl estrodiol have a greater sensitivity to steroid metabolites as evidenced by skin tests.

Two per cent of women that started the regimen could not tolerate it, but five to ten per cent had slight nausea, when the regimen was well explained they continued.

Symptoms of breast fullness, nausea, abdominal cramps, and vomiting increased notably with estrogen supplementation. The incidence difference of reactions is 13.2 per cent higher in compounds with estrogen. There is a decline of 21.2 per cent for all compounds for cycles after the first medicated cycle. This is significant. Ninety per cent of side effects were helped with antacids. In a group of 200 psychotic women only two had nausea and vomiting.

Antacid therapy with magnesium aluminum glycinate was tried in 52 women in 502 cycles. Thirty-nine of the women took one to ten tablets and 32 reported relief for an 82 per cent cure rate. Thirteen remained unhelped and of these, six observed spontaneous relief, for a 46 per cent cure of symptoms. Therefore we expect 46 per cent of those who take tablets of antacid to be cured with or without it or 18 of 39. This leaves 21 to show improvement with antacids and only seven improved so the cure rate is 67 per cent.

A study with placebos showed 17.1 per cent of patients to have side effects, and without a placebo 23.3 per cent experienced side effects. In 48 women widely separated and no warning of reactions only 6.1 per cent had reactions. These suggest a psychogenic factor involved. Other factors considered were:

	Increase PER CENT	*Decrease* PER CENT	*No Change* PER CENT
Weight	55	20	25
Well being	39	10	51
Libido	20	22	58
Frequency of Coitus	50	40	10

200 Pelvic Examinations Following Medication Revealed

1. Involuted post partum uteri to normal size but no hypertrophy after 30 cycles.
2. Inconsistent changes in cervical erosion.
3. No pathological changes in adnexal or vagina.
4. All vaginal smears were papanicolau negative—no pathological breast changes.

The rate of departure from the method is as follows, after the first cycle 27 per cent will have discontinued because of side effects, if the medication is continued past the first cycle the dropout rate decreases rapidly, *i.e.,* after six cycles 13.4 per cent will discontinue, after 12 cycles 23.6 per cent will have discontinued, and after 18 cycles 26.5 per cent will have discontinued. Lack of interest and reactions account for about 50 per cent of the withdrawals.

Examination of the peripheral blood after medication for one to 12 cycles in 39 subjects during medication and ten after having discontinued for three to eight months previously showed:

Control bleeding time = 145.9 sec.—Clotting time = 278.8 sec.

Medicated bleeding time = 116.8 sec.—Clotting time = 261.5 sec.

After Med. bleeding time = 103.4 sec.—Clotting time = 223.9 sec.

No significant difference was noted in hemoglobin values.

Metabolism and Excretion

Savard states that it has recently been established that progesterone is a precursor of the androgenic steroids, testosterone, and androstenedione. Werbin

recovered radioactive etiocholanolone from the urine of a female patient who was suffering from adrenal cortical carcinoma after administration of C^{14}–4 progesterone.

Rogers and McLellan point out that progesterone is in part excreted by the way of bile into the gastrointestinal tract. It has been surmised that progesterone is excreted as androgen in the cow's feces.

McGinty believes that norethindrone undergoes partial conversion to 17 α ethynyl estradiol either in the intestinal tract or after absorption. Such a conversion need not be extensive to yield sufficient estrogen to account for the pituitary suppressive action of norethindrone.

Effect of Menses, Ovulation, and Future Pregnancy

During medication the mean cycle length with norethindrone five mg/day was significantly prolonged. In four of nine cycles withdrawal bleeding failed to occur but brief episodes of spotting occurred previous to withdrawal. Norethynodrel in five mg/-day dosage significantly shortened menstrual cycles and menstrual bleeding was like normal cycles in three of four.

Pincus noted that the endometrial tissue was easily shed in a normal average four day flow following medication withdrawal. Post medication cycles are notable because normal cyclical endometrial changes are rapidly established.

Following withdrawal of medication permanently the mean length of cycles for one to three periods with norethindrone and norethynodrel compared closely to the controls. There is a slight delay of the first post medication cycle with norethindrone. This is believed to be caused by a significant mean increase in length of the preovulatory phase, which explains a postponement of catamenia. Second cycles following discontinuance of medication were normal in all respects and there is too little data to analyze for third cycles.

With norethynodrel the prolongation of the preovulatory phase and cycle length is greater in the first non-medicated cycle than in the second and third succeeding cycles.

The duration of menses with norethindrone in the first non-medicated cycle showed a minor degree of lengthening. Norethynodrel and norethandrolone showed no change. Follow-ups of 50 patients indicated that all resumed regular ovulation and menstruation on cessation of medication.

Another study concerned with menses noted the mean cycle length to be 28.6 days, with two per cent having breakthrough bleeding. Regular withdrawal bleeding occurred in 99.2 per cent while on monthly medication. Regarding amount of flow six per cent increased, 48 per cent decreased, and 46 per cent noted no change. No change was noted in the incidence of dysmenorrhea.

Ovulation inhibition occurred regularly with all three compounds at all dosages with or without estrogen. At dosages of five mg/day of norethindrone or norethynodrel; ovulation is inhibited and pregnanediol excretion decreased. This means that at this dosage the progesteroneogenesis inhibiting effect is uninhibited, but as noted above breakthrough bleeding occurred rather often at this dosage.

Patients studied after three to four cycles of medication revealed an ovulation rate of 90 per cent and on the basis of present knowledge this rate of ovulation holds true for much longer periods of medication. Pregnancy has occurred after 1½ years of medication and in one instance pregnancy took place in the first post-medication cycle. One important question, not completely answered yet is how long can ovulation be suppressed in sexually active women. From the studies to date the answer would seem to be, indefinitely.

Proof that effective ovulation does occur is seen when we study the decrease in number of pregnancies that occurs while on the medication. In 1,279 cycles in which norethynodrel 10 mg/day was taken day five to 25 of the cycle and no tablets were missed. The patients continued regular copulation and used no other contraceptive. No pregnancies occurred. In 282 cycles in which one to five tablets were missed two pregnancies occurred. In 151 cycles in which six or more tablets were missed three pregnancies occurred. The respective incidences = 0 to 9.2 to 25.8/100 woman years. The normal rate for Puerto Rican women is 65 to 70 per 100 woman years with no contraceptive devices. The normal rate without contraception is 0.625 pregnancies/year of marriage. In the faithfully medicated the pregnancy rate was zero, a reduction of 100 per cent. In those missing one to five tablets the rate was 0.092 pregnancies/year, and in those who missed six or more tablets the rate was 0.259 pregnancies/year. The rate for the entire group was 0.038 pregnancies/year representing a reduction of 93.9 per cent.

Animal studies by Pincus with a dosage of 0.5 mg/Kg. norethynodrel daily for 35 days given to female rats in whom copulation and vaginal estrus were continued showed no fertile matings. Twenty-seven to 41 days after treatment ten rats bore litters. This indicates temporary sterility. Female rats that received norethynodrel for three days while mated with male rats all (ten pairs) showed fertile matings within six to seven days after treatment.

In another study female rats about three months old were housed with male rats and treated with norethynodrel for 35 days. None became pregnant

while on medication but 90 per cent did so after stopping the drug. The effectivity was determined to wear off in approximately one month.

Tyler, *et al.*, noted that with the same dosage individual women were more susceptible to inhibition of ovulation than others.

Activity as Related to Progesterone

Norethynodrel has less progestational activity than progesterone when injected. Five mg. of progesterone orally is required to produce the same response as 0.05 mg. subcutaneously. Norethynodrel is approximately ten times as active orally as oral progesterone on uterotropic action. It shows ten per cent of the estrogenicity of estrone on the mouse weight assay when 1.5 per cent of EME is added to it. When norethynodrel is free of extrinsic estrogen and supposedly pure it shows seven per cent the activity of estrone. R. A. Edgren (unpublished data 1957) found that norethynodrel given orally showed only ⅓ as much estrogenic activity as when given subcutaneously. This is in contrast to the progestation effect which is greatly enhanced when given orally. (Two mg/day was inadequate in sustaining pregnancy whereas ½ mg progesterone is adequate. No response was noted in deciduoma tests.)

Norethindrone has about the same order of activity except for the nausea with or without vomiting. Given orally it is about two times as active as progesterone parenterally. Estrogenicity in norethindrone is mainly due to 17 α ethynyl estradiol three methyl ether which is a contaminant. Norethindrone is $^1/_{10}$ as active as estrone orally and is as active orally as subcutaneously in the rabbit. It has practically no inherent androgenicity. Pincus states that by Clauberg assay norethindrone is ten times as active on uterotropic action. No response in deciduoma tests was noted. It has a certain degree of pregnancy maintaining effect at low doses but this is abolished in high doses.

Norethandrolone was noted to have the greatest progestational activity of these three agents. It is ten times as active on uterotropic activity. In deciduoma tests it had ¼ the activity of progesterone. It inhibits ovulation as effectively as progesterone and it sustains pregnancy as well as progesterone. This compound appears to have the action of progesterone but is more effective.

In antifertility tests all were effective subcutaneous or orally and all were more effective than progesterone. All inhibit normal reproductive processes in one respect by inhibiting ovulation and stimulate it by increasing endometrial growth.

Operative Findings

Seven cases were studied; five of these had been medicated for one cycle, one for two cycles, and one for three cycles before surgery. Endometrial biopsies in the postovulatory phase were all of normal secretory type. In two cases the ovaries were small and sclerotic. Three cases showed gross follicles. None were seen in four others. In all seven cases no recent corpora lutea were seen. Three cases showed evidence of some regressing corpora lutea from old cycles. Two of five ovarian biopsies presented a normal number of primordial follicles. Three biopsies (two of one cycle) (one of three cycles) medication showed scant primordial follicles.

Could these steroids have a destructive effect on mature and primordial follicles? This was not borne out by the characteristic following menses nor in subsequent fertility of seven non-operated patients similarly treated.

"Unrelated Nonsteroidal Substance"

The use of a compound, entirely unrelated to the previously described agents, has been studied quite extensively in India by Dr. S. N. Sanyal.

This compound is m-xylohydroquinone, which is derived from a certain family of peas, Pisum Sativum. These peas have been the principal food in the diet of the people of Tibet. Its population has remained constant for over 200 years. The National Drug Company determined in 1953 that mice fed a 20 per cent diet level of this compound diminished litter formation and at a 30 per cent level litter formation was abolished.

Sanyal published the results of his studies regarding the site and mode of action of this substrance with the *Calcutta Medical Journal* from 1950-1955. In essence he believes its action is due to its inhibiting effect on the peripheral action of progesterone and consequent prevention of nidation of the fertilized ovum.

Extensive clinical field trials were carried out in the Baldeodas Maternity Hospital in Calcutta, India, for a period of 2½ years. This study involved two groups. The first was a low income group of Indians and the second involved primarily clinic patients. The study was closely controlled by watching the subjects eat their pills.

The first group was comprised of 427 patients who took the medication for 2,167 months. The normal pregnancy rate was 65 births/100 woman years. The rate of conception was decreased to 32/100 woman years. This group was poorly observed.

The second group which was closely observed was composed of 254 patients who took medication for 1,465 months. The normal birth rate was 65 births/-100 woman years. The rate of conception dropped to 22/100 woman years.

The medication was given in capsules in 150 mg. doses with five per cent sodium hydrosulphite, ten per cent dextrose to prevent oxidation in the gastro-

intestinal tract. It was given on day 16 and 21 or 12 to seven days respectively before the expected onset of menstrual flow. In this series most of the patients were illiterate and the exact dates were difficult to determine.

The question of permanent sterility was well answered here. Fourteen patients conceived during withdrawal for one to two months, and out of 33 patients who discontinued medication eight conceived within three months. Twenty-five patients did not conceive for at least six months.

There was no damage to newborn infants; 27 of 32 births delivered normal infants. There were two still births and three miscarriages, which is a normal proportion in the low income group in India. This dosage proved not to be an abortifacient because 68 patients who started medication were later found to be pregnant after having taken medication for a number of months. None aborted.

Effectiveness in the young highly fertile group is seen in the following data:

	Pregnancy Rate (Woman Years)	
Ages	PRIOR TO TREATMENT	FOLLOWING MEDICATION
15-20	97/100	35/100
21-25	74/100	24/100
26-30	65/100	33/100
31-35	63/100	31/100
> 36	57/100	17/100

Toxicity

A negligible few complained of griping in the abdomen when taken on an empty stomach. Eighty patients taking two 150-300 mg. pills/month for nine to 21 months were examined and no alteration was noted in blood pressure, pulse, hemoglobin, RBC, WBC, and differential or albumin or casts in the urine. No evidence of cumulative toxicity was noted. Eight hundred patients took 300-350 mg. two times monthly for varying periods with no undesirable effects.

Toxic effects of acute intoxication include nausea, vomiting, giddiness, acute abdominal pain, anuria diarrhea, and fainting. If toxicity is chronic, changes in blood pressure and pulse rate occur along with albumin and cases in the urine.

It is possible to cause Vitamin E deficiency in rats whose store is low and diet is inadequate. In humans it does not counteract Vitamin E because the storage in heart, liver muscle and other organs is too great. Diet also contains adequate amounts.

The first group which had a higher pregnancy rate indicates a failure to take the second monthly capsule or possibly not taking it on the correct day. This indicates that one capsule does not give protection as early as the 12th premenstrual day. It has been suggested that, in an illiterate population capsules taken weekly might be more effective. Also, more frequent doses in the premenstrual period would be more effective. The minimum dosage has not been established as yet.

No previously known chemical agent is able to antagonize directly female sex hormones. Estrogen and progesterone are synergistic up to a certain level. They then become antagonistic. Excess estrogen decreases estrogen production and brings about sterility for a time. When endogenous estrogen is increased the anterior pituitary decreases its secretion by increasing progesterone through LH. When progesterone is in excess the anterior pituitary liberates FSH to stimulate secretion of estrogen. M-xylohydroquinone neutralizes peripheral progesterone and its effects on the endometrial gland. It is not known whether it also neutralizes estrogen.

This compound should be studied more extensively for two to three years for toxicity and determination of biologic mechanisms.

There is a place for such agents and it will probably be forthcoming as a result of the intensive search now going on in all parts of the world. Should it prove acceptable in all respects it could usher in an era in which men and women everywhere could plan their familial future and provide for their children. This method depends not on local action but on systemic actions; the extent of which has not been completely determined.

Greenblatt sites a case of a woman with an adrenal tumor who secreted over 750 mg. pregnanediol per 24 hours for several years: She had normal ovulatory menses for seven years postoperatively. Fears that continuous administration of progesterone-like substances might cause damage to ovaries may be unfounded.

We should consider our knowledge of the biochemistry and the biology of human reproduction. By doing this the gaps in our knowledge will be revealed and we can take steps to remedy our ignorance. This line of approach is more acceptable because it will certainly lead to the advancement of knowledge even though it fails to produce "the pill."

Is it effective? Yes
Does it cause abnormalities in menstrual flow? No
Does it adversely effect reproductive tract and adnexae? No
Does it have physiological adverse effects? No
Does it affect the sex life? No
Does it impair fertility? No
May a low dosage be used? Yes
Is the method acceptable? Yes, varying with motivation, economic situation and other factors.

Editor's Note: References may be obtained by writing the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 315 W. 4th Street, Topeka, Kansas.

The President's Message

Dear Doctor:

I remember well last year about this time, the excellent article written on education by Dr. Glenn R. Peters, during his term as President. Again, I want to speak of education so we will not forget it is our duty to put forth every effort we can to support the advancement of education from kindergarten through all the branches of higher learning. Education is not a political football to be thrown back and forth at the expense of our children, grandchildren, and great-grandchildren. As we well know, about the only inheritance the future generation will have, which we can give them, is education. Ways must be found by diligent study to be able to meet teachers' salary increases, retirement plans, etc. to make Kansas comparable to the other states along these lines. Each year we have been losing many of our top teachers not only in the elementary system, but also specialists in certain fields. Many of them are scientists and the more talented teachers who are doing necessary research work.

The following is a quote from a speech by Dr. C. Arden Miller, Dean of the University of Kansas Medical School, given before the Shawnee County Medical Society, "When support is abundant for educators, education will flourish. It will flourish in medicine only with increased direct support not only to medical schools, but to all colleges, universities, secondary, and primary schools from which we derive our talented students and staff."

This, I think, sums up in a few words our responsibility. May I add that we, as doctors, should put forth every effort to encourage young men and women to take up nursing as a profession, for hospitals throughout Kansas are in dire need of nursing personnel.

Yours very truly,

President

Maternal Mortality

The patient was a 32-year-old gravida IV, para III who died five days following delivery by Cesarean section because of peritonitis caused by perforation of the ileum at the time of section. An autopsy confirmed the diagnosis.

The patient's pregnancy was uneventful and according to the record her prenatal care was consistent and of good quality. Labor ensued spontaneously and upon admission to the hospital the patient was found to be having moderately hard contractions every ten minutes. The cervix was dilated three centimeters with a 50 per cent effacement. However, examination disclosed a transverse lie with a hand presenting. Therefore, a consultation was called and a Cesarean section was performed without delay. The patient tolerated the procedure well and an eight lb., five oz. live infant was delivered.

On the first postoperative day the patient was started on penicillin, 600,000 units twice daily because of a cough. She had a Foley catheter in place and her urinary output was 1200 cc.

On the second postoperative day the patient was noted to have some distention and she complained of nausea. She was described as perspiring profusely and she complained of being weak and tired. Notable findings included a pulse rate of 120, her temperature was 99.6, and her leukocyte count was 53,600. It was noted that 100 cc. of concentrated urine was obtained by the indwelling catheter but no other output was recorded.

The patient was seen by the attending physician on the third postoperative day at which time he felt she was in fairly good condition and left her in the hands of another physician while he was out of town. It was noted that the abdomen was distended and the patient complained of nausea, profuse perspiration, and generalized discomfort. Her temperature was 100 and her pulse was 120. Although the patient had been ambulatory previously, she did not get up this day. A Fleets® enema was administered with no return. The only urinary output was noted as 175 cc. On the following day the distention was noted as being greater and the upper abdomen was firm. The patient vomited one time and took liquids poorly during the day. The output was 100 cc. There was no notation of temperature or pulse rate.

On the fifth postoperative day it was noted that the abdomen was soft and patient was taking liquids well. However, in the early afternoon she began to complain of severe gas pains and developed diaphoresis. She had sufficient discomfort to require Demerol® 50 milligrams and later morphine grain 1/6. An enema gave poor results and it was noted in the late afternoon that the patient was cold, clammy, and appeared pale. On this day the pulse was 110, respiration was 20, and her blood pressure was 110/98. The hemoglobin count was 18.2 grams and leukocyte count was 10,500. By evening the patient had become clammy and cyanotic. Oxygen was started. She was given Solu-Cortef®, 100 milligrams in 1000 cc. of five per cent dextrose in water intravenously. Her condition deteriorated rapidly and a Levine tube was inserted with the removal of a large amount of foul smelling liquid. The patient expired shortly thereafter.

Committee Opinion

It was noted that the continuing high pulse rate and evidence of dehydration were not held in sufficient regard. Furthermore, a white count of 53,600 should have excited more concern. The combination of factors indicated a condition not satisfactory enough for the physician to leave town.

Continuing distention should have called for decompression rather than continuation of food by mouth. X-ray of the abdomen would have been helpful in confirming the presence of ileus. The patient's course would seem to emphasize that the physician must carefully assess the patient's condition himself and not rely upon nursing notes for this evaluation.

In summary, attention to fluid and electrolyte balance and sufficient antibiotic therapy might have changed the course of the patient's condition. Cesarean section in the presence of ruptured membranes enhances the possibility of postoperative infection and calls for vigorous antibiotic therapy. Perforation of the bowel during the course of the section is a fortunately infrequent complication but one that must always be kept in mind as a possibility.

Classification

Maternal death, direct obstetric, avoidable.

One of a series of case reports prepared by the Committee on Maternal Welfare to illustrate the type of study made in each instance of maternal death in Kansas.

Mills' Bill Becomes Law—October 1

The 86th Congress radically amended the Social Security Act during 1960. Some of this material is of vital importance to the medical profession. The progress of this bill and the provisions it contains will be reported at some length.

For months health care of the aged received Congressional interest. Most widely publicized was the Forand Bill which would provide surgical, hospital and nursing home care for recipients of Social Security benefits. This was defeated by the House Committee on Ways and Means and the so-called Mills Bill, H. R. 12580, was substituted in its place. This was reported out in the middle of June and on June 23, 1960, passed the House by a vote of 380 to 23.

The Senate Finance Committee held hearings on this bill in the latter part of June. On August 20, 1960, after adopting and rejecting some amendments, H. R. 12580 was sent to the floor of the Senate.

On August 23, 1960, Senator Javits attempted to amend this bill to include some 11 million persons over age 65, with a single income of not more than $3,000 and a family income of not more than $4,500. The individual would pay 10 per cent, the Federal Government one-third to two-thirds of the state's cost depending on the state's per capita income. This amendment was defeated by a vote of 67 to 28. Later on the same day the Anderson-Kennedy amendment, to place the program directly under Social Security, was defeated by a vote of 51 to 44. Several other amendments were attempted and the bill passed by a vote of 91 to 2.

After a conference committee reached an agreement the House accepted the Conference Committee report on August 26, 1960, by a vote of 368 to 17. On August 29, the Senate approved the Conference Committee report by a vote of 73 to 12. The bill was signed by the President on September 13, 1960 and will become public law 86-778 on October 1, 1960.

The following are the most significant items of this new law as they relate to health.

Title I deals with the OASDI program. It adds amendments relative to the election of coverage by ministers, state and local government employees, employees of nonprofit organizations, domestic service and casual labor. Employees of municipal and county hospitals may elect for Social Security coverage regardless of how city or county governments have elected for their employees.

The House included self-employed physicians, and interns and residents under Social Security. A Senate amendment took them out. This was agreed upon and as a result physicians are not now included in the bill.

Title II modifies the "earnings test" relating to benefits under Social Security. An individual may earn up to $1,200 a year without loss of benefits. If he earns between $1,200 and $1,500, his Social Security benefit will be reduced by 50 cents for each $1 of earnings above $1,200. If he earns more than $1,500, his monthly benefit would be reduced 50c for each $1 of earnings between $1,200 and $1,500 and $1 in benefits for each $1 earned above $1,500. As under exisiting law, no benefit would be withheld in any month in which the beneficiary earns less than $100.

This title also liberalizes the requirements for a "fully insured" status by providing that an individual would need one quarter of coverage for each three quarters elapsing since the beginning of 1951 or 40 quarters of coverage. (Existing law requires one quarter of coverage for each two elapsing since the beginning of 1951.)

The Senate bill lowered the retirement age for men to 62. This was not in the House bill. The Conference Committee adopted the House version. Therefore, the retirement age remains at 65, where it was.

Title III increases benefits for children of deceased workers and in certain cases raises family maximum benefits.

Title IV eliminates age 50 as a requirement for

disability insurance benefits. It also takes off the six months waiting period in some cases. Under existing law, disabled persons who return to work under a state approved vocational rehabilitation plan may draw benefits for 12 months even though they are gainfully employed. Others, under similar circumstances, do not have this benefit. The new law substantially gives all an equal advantage although the formula is slightly different.

Title V deals with unemployment compensation.

Title VI is the section of most importance to Medicine. This offers medical assistance to persons on old age assistance and to other aged persons whose income and resources as determined by the state are not sufficient to meet the costs of necessary medical service.

The law requires the program be placed in effect in all political subdivisions of the state. The state must participate financially. The program must be administered by a single state agency. Institutions, housing recipients of such benefits, must be standardized by the state and the state must guarantee that information regarding applicants and recipients be not disclosed to the public.

The state shall also report regularly to the Secretary of Health, Education and Welfare. It shall make reasonable standards for determining eligibility for and the extent of such assistance and shall prepare a description of services that will be provided.

"Old Age Assistance" means "money payments to, or medical care in behalf of or any type of remedial care recognized under state law in behalf of, needy individuals who are 65 years of age or older, but does not include (1) any payments to or care in behalf of any individual who is an inmate of a public institution (except as a patient in a medical institution) or any individual who is a patient in an institution for tuberculosis or mental diseases, or (2) *payments* to an individual diagnosed as having tuberculosis or psychosis and who is a patient in a medical institution, or (3) any *care* in behalf of an individual who is a patient in a medical institution for tuberculosis or psychosis for a period exceeding 42 days.

If the state plan includes medical assistance for the aged not under Old Age Assistance, this plan must provide some institutional and some non-institutional care. The state cannot impose a lien upon the property either before the owner's death or upon the survivor.

Medical assistance would include: inpatient hospital services; skilled nursing home services; physicians' services; outpatient or clinic services; home care; private duty nursing; physical therapy and related services; dental services; laboratory and x-ray services; prescribed drugs, eyeglasses, dentures and prosthetic devices; diagnostic screening and preventive services, and any other medical care or remedial care recognized under state law.

There are no limitations on any of the above services except that long time care in a tuberculosis or mental hospital will not be paid.

The Secretary of Health, Education and Welfare is required to approve any state plan which meets the above requirements. He cannot approve any plan which imposes an age requirement of more than 65, or a residence requirement which excludes anyone who has resided within the state five of the nine years immediately preceding his application or for medical assistance of the aged who are not under OAA and who reside in the state nor any citizenship requirement which excludes a citizen of the United States. Moreover, the state must have only one plan for both the OAA and the medical assistance programs. They could, however, be administered by different departments.

The financial formula is complicated and varies according to the state's per capita income. In an effort to be brief, the following is not entirely correct. It is intended to give an indication. The Federal Government may pay from 50 per cent to 80 per cent of funds used for medical assistance with the state and county paying the remainder. This is broken down into a series of categories and varies with each, but unless a large amount of explanation is given this comes as close to defining the program as possible. The Federal Government will also contribute one-half the cost of operation of the program.

Title VII includes many miscellaneous amendments such as increased appropriations for maternal and child health services from $21.5 to $25 million, crippled children's services from $20 to $25 million, child welfare services from $17 to $25 million. It increases many other grants including aid to the blind from $50 to $85 a month.

Party Health Platform

Below are reprinted the statements relating to health which were adopted by each of the major parties during their National conventions. Material was prepared and reprinted from the *A.M.A. News*.

REPUBLICAN

Human Needs

The ultimate objective of our free society and of an ever growing economy is to enable the individual to pursue a life of dignity and to develop his own capacities to his maximum potential.

Government's primary role is to help provide the environment within which the individual can seek his own goals. In some areas this requires federal action to supplement individual, local and state initiative. The Republican Party has acted and will

act decisively, compassionately, and with deep human understanding in approaching such problems as those of the aged, the infirm, the mentally ill, and the needy.

This is demonstrated by the significant increase in social security coverage and benefits as a result of recommendations made by the Eisenhower-Nixon Administration. As a result of these recommendations and normal growth, 14 million persons are receiving benefits today compared to five million in 1952, and benefit payments total $10.3 billion as compared to $2.5 billion in 1952. In addition there have been increases in payments to those on public assistance, both for their basic needs and for their health and medical care; and a broad expansion of our federal-state program for restoring disabled persons to useful lives—an expansion which has accomplished the rehabilitation of over half a million persons during this Administration.

New needs, however, are constantly arising in our highly complex, interdependent, and urbanized society.

To meet the needs of the aging, we pledge:

—Expansion of coverage, and liberalization of selected social security benefits on a basis which would maintain the fiscal integrity of the system.

—Support of federal-state grant programs to improve health, welfare and rehabilitation services for the handicapped older persons and to improve standards of nursing home care and care and treatment facilities for the chronically and mentally ill.

—Federal leadership to encourage policies that will make retirement at a fixed age voluntary and not compulsory.

—Support of programs that will persuade and encourage the nation to utilize fully the skills, wisdom and experience of older citizens.

—Prompt consideration of recommendations by the White House Conference on Aging called by the President for January 1961.

Health Aid

Development of a health program that will provide the aged needing it, on a sound fiscal basis and through a contributory system, protection against burdensome costs of health care. Such a program should

—provide the beneficiaries with the option of purchasing private health insurance—a vital distinction between our approach and Democratic proposals in that it would encourage commercial carriers and voluntary insurance organizations to continue their efforts to develop sound coverage plans for the senior population;

—protect the personal relationship of patient and physician;

—include state participation.

For the needs which individuals of all age groups cannot meet by themselves, we propose:

—Removing the arbitrary 50-year age requirement under the disability insurance program while amending the law also to provide incentives for rehabilitated persons to return to useful work.

—A single, federal assistance grant to each state for aid to needy persons rather than dividing such grants into specific categories.

—A strengthened federal-state program to rehabilitate the estimated 200,000 persons who annually could become independent after proper medical services and occupational training.

—A new federal-state program, for handicapped persons completely dependent on others, to help them meet their needs for personal care.

Health

There has been a five-fold increase in government-assisted medical research during the last six years. We pledge:

—Continued federal support for a sound research program aimed at both the prevention and cure of diseases, and intensified efforts to secure prompt and effective application of the results of research. This will include emphasis on mental illness.

—Support of international health research programs.

We face serious personnel shortages in the health and medical fields. We pledge:

—Federal help in new programs to build schools of medicine, dentistry, public health and nursing and to provide financial aid to students in those fields.

We are confronted with major problems in the field of environmental health. We pledge:

—Strengthened federal enforcement powers in combatting water pollution and additional resources for research and demonstration projects. Federal grants for the construction of waste disposal plants should be made only when they make an identifiable contribution to clearing up polluted streams.

—Federal authority to identify, after appropriate hearings, air pollution problems and to recommend proposed solutions.

—Additional resources for research and training in the field of radiological medicine.

Protection of Consumers

In safeguarding the health of the nation the Eisenhower-Nixon Administration's initiative has resulted in doubling the resources of the Food and Drug Administration and in giving it new legal weapons. More progress has been made during this period in protecting consumers against harmful food, drugs, and cosmetics than in any other time in our history. We will continue to give strong support to this consumer-protection program.

Veterans

We believe that military service in the defense of our Republic against aggressors who have sought to destroy the freedom and dignity of man imposes upon the nation a special responsibility to those who have served. To meet this responsibility, we pledge:

—Continuance of the Veterans Administration as an independent agency;

—Highest possible standard of medical care with increasing emphasis on rehabilitation to restore them to meaningful lives.

DEMOCRATIC

Health

Illness is expensive. Many Americans have neither incomes nor insurance protection to enable them to pay for modern health care. The problem is particularly acute with our older citizens, among whom serious illness strikes most often.

We shall provide medical care benefits for the aged as part of the time-tested social security insurance system. We reject any proposal which would require such citizens to submit to the indignity of a means test—a "pauper's oath."

For young and old alike, we need more medical schools, more hospitals, more research laboratories to speed the final conquest of major killers.

Medical Care for Older Persons. Sixty million Americans—more than one-third of our people—have no insurance protection against the high cost of illness. For the rest, private health insurance pays, on the average, only about one-third of the cost of medical care.

The problem is particularly acute among the 16 million Americans over 65 years old, disabled workers, widows and orphans.

Most of these have low incomes and the elderly among them suffer two to three times as much illness as the rest of the population.

The Republican administration refused to acknowledge any national responsibility for health care for elder citizens until forced to do so by an increasingly outraged demand. Then, their belated proposal was a cynical sham built around a degrading test based on means or income—a "pauper's oath."

The most practicable way to provide health protection for older people is to use the contributory machinery of the social security system for insurance covering hospital bills and other high cost medical services. For those relatively few of our older people who have never been eligible for social security coverage, we shall provide corresponding benefits by appropriations from the general revenue.

Research. We will step up medical research on the major killers and crippling diseases—cancer, heart disease, arthritis, mental illness. Expenditures for these purposes should be limited only by the availability of personnel and promising lines of research. Today such illness costs us $35 billion annually, much of which could be avoided. Federal appropriations for medical research are barely one per cent of this amount.

Heart disease and cancer together account for two out of every three deaths in this country. The Democratic President will summon to a White House conference the nation's most distinguished scientists in these fields to map a coordinated long-run program for the prevention and control of these diseases.

We will also support a cooperative program with other nations on international health research.

Hospitals. We will expand and improve the Hill-Burton hospital construction program.

Health Manpower. To ease the growing shortage of doctors and other medical personnel we propose federal aid for constructing, expanding and modernizing schools of medicine, dentistry, nursing and public health.

We are deeply concerned that the high cost of medical education is putting this profession beyond the means of most American families. We will provide scholarships and other assistance to break through the financial barriers to medical education.

Mental Health. Mental patients fill more than half of the hospital beds in the country today. We will provide greatly increased federal support for psychiatric research and training and community mental health programs to help bring back thousands of our hospitalized mentally ill to full and useful lives in the community.

A Program for the Aging

The Democratic administration will end the neglect of our elder citizens. They deserve lives of usefulness, dignity, independence, and participation. We shall assure them not only health care but employment for those who want work, decent housing, and recreation.

Already 16 million Americans—about one in ten—are over 65, with the prospect of 26 million by 1980.

Health. As stated, we will provide an effective system for paid-up medical insurance upon retirement, financed during working years through the social security mechanism and available to all retired persons without a means test. This is first priority.

Income. Half of the people over 65 have incomes inadequate for basic nutrition, decent housing, minimum recreation and medical care. Older people who do not want to retire need employment opportunity and those of retirement age who no longer wish to or cannot work need better retirement benefits.

We pledge a campaign to eliminate discrimination in employment due to age. As a first step we will

(Continued on page 535)

VOTE

ON NOVEMBER 8th

And Give Your Employees Time to Exercise Their Voting Right

If you fail to do so, the time may come when you no longer have the opportunity!

The Business Side of Medicine

Life Insurance Dividends

FLOYD F. WEHRENBERG, ***Kansas City, Missouri***

The average physician is currently carrying approximately $70,000 of life insurance of various types. This means that the matter of dividend treatment frequently poses an important problem.

Four Options to Consider

Basically, there are four options that may be exercised on most participating life insurance contracts with regard to the disposition of dividends. These are: **1.** The cash option which provides that annual dividends will be paid in cash; **2.** the premium option which provides that dividends will be used annually in partial satisfaction of premiums due; **3.** the paid-up insurance option which provides for the application of annual dividends to purchase paid-up additions to your life insurance policy; and **4.** the interest option which provides for the deposit of dividends with the company to accumulate at interest.

For the most part, Options No. 1 and No. 4 have little value for the average physician in the process of building up his insurance program today. Option No. 1 is of value only on paid-up participating policies where the policyholder has no need for additional insurance and is no longer paying premiums against which the dividends could be offset. Option No. 4 is generally outmoded due to a low rate of return (two per cent to 2.5 per cent) and the fact that with most low net cost companies, the paid-up additions will have a *cash value* which will equal or exceed the accumulation of dividends at interest over a period of years. Option No. 4 would be worth considering only on contracts where it would be *elective* to convert accumulated dividends and interest to paid-up insurance at any time. Incidentally, such a privilege is relatively rare today.

Two and Three Are Best

It is our opinion that Options No. 2 and No. 3 are most worthy of consideration for the average policyholder. Option No. 2 is most useful for the doctor who, at a young age, is building up a large insurance program and wants maximum protection. Obviously he can carry much more insurance by paying the *net premium* (premium less dividend) than he could by using dividends in another manner. As this doctor improves his financial position or if he later becomes uninsurable, he can change his election to paid-up insurance if he wishes.

Option No. 3 is usually best when a doctor is 40 to 50 years of age and does not have as much insurance as he should have or would like to have. It is also valuable to the doctor who has become uninsurable. In either of these situations he can elect to have the dividends purchase paid-up additions. This will increase his protection and maintain a cash value about equal to or slightly greater than the dividends invested. He is thereby given the advantage of maximum protection while he retains a cash reserve for retirement or emergency use.

Years Ago

Many doctors years ago elected to leave dividends at interest. They now have a sizable accumulation drawing two per cent to three per cent taxable interest. In these cases, each situation should be reviewed

Mr. Wehrenberg is Missouri-Kansas manager, Professional Management Midwest, 4010 Washington Street, Kansas City, Missouri.

and probably the dividend option changed. If the doctor needs protection through additional insurance, a paid-up insurance option should be taken on future dividends and to the extent possible on accumulated dividends. If paid-up additions are prohibited on the accumulation, it is our feeling that these dividends can be withdrawn and profitably reinvested elsewhere. This also applies to the situation where present insurance, reduced insurance needs and other assets make it unnecessary to consider additional insurance. Dividends can usually be withdrawn and reinvested at a higher return.

Before a decision is made, however, your insurance needs and coverage should be thoroughly reviewed by a competent insurance agent or analyst. Your over-all financial position must be taken into consideration in relation to the methods of change available to you under your individual contracts of insurance. If you have a dividend problem or question, contact a qualified person for counsel at once.

Editorial Comment

(Continued from page 532)

prohibit such discrimination by government contractors and subcontractors.

We will amend the Social Security Act to increase the retirement benefit for each additional year of work after 65, thus encouraging workers to continue on the job full time.

To encourage part-time work by others, we favor raising the $1,200 a year ceiling on what a worker may earn while still drawing social security benefits.

Retirement benefits must be increased generally, and minimum benefits raised from $32 to $50 a month.

Housing. We shall provide decent and suitable housing which older persons can afford. Specifically we shall move ahead with the program of direct government loans for housing for older people initiated in the Housing Act of 1959, which the Republican administration has sought to kill.

Special Services. We shall take federal action in support of state efforts to bring standards of care in nursing homes and other institutions for the aged up to desirable minimums.

We shall support demonstration and training programs to translate proven research into action in such fields as health, nutritional guidance, home care, counseling, recreational activity.

Taken together, these measures will affirm a new charter of rights for the older citizens among us—the right to a life of usefulness, health, dignity, independence and participation.

Physically Handicapped. We pledge continued support of legislation for the rehabilitation of physically handicapped persons and improvement of employment opportunities for them.

Vote November 8

In a previous, August, 1960 issue, the JOURNAL summarized regulations governing political activities of the Medical Society. In general these require the Society shall not endorse candidates but issues may be discussed. Please read the health platforms of the two major parties which are published in this issue of the JOURNAL in the Editorial section.

The Society is legally permitted to advise its individual members to engage in political activities in behalf of the party of their choice. The physicians of Kansas have a special responsibility in health legislation. They should examine the health platforms of the two parties, select the program they prefer and then learn the views of the individual candidates in this regard. Once this is known, the doctor as a citizen should use his special influence in the support of the candidate who will support his philosophy of good government in all fields, but especially in the area of health.

The Kansas Medical Society may legally ask each of its members to exert his privilege of voting. The coming election will determine the course this country will take in the future. Unless each eligible voter casts his preference, the government might well not represent the majority.

Election day is Tuesday, November 8. Your participation in this democratic function is essential. Be sure all members of your family, who are of voting age, will also cast their ballot. Give employees time away from the office to enable them to vote. Encourage voting among your friends, talk to your patients about it.

Our main business is not to see what lies dimly at a distance, but to do what lies clearly at hand.

—*Sir William Osler*

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From the Stacks

State Medical Library

MRS. BLENDENA EVANS, *Librarian*
Stormont Medical Library, State House
Room 516, Topeka, Kansas
Phone CE 5-0011 ex. 297.

Recent Acquisitions

Allergy

Prigal, S. Fundamentals of modern allergy. 1960.

Anesthesiology

Bonica, J. Clinical applications of diagnostic and therapeutic nerve blocks. 1959.
Evans, F. General anaesthesia. Volumes 1 and 2, 1959.
Smith, R. Anesthesia for infants and children. 1959.
Wylie, W. D. A practice of anesthesia. 1960.

Bacteriology and Immunology

Clifton, C. Annual review of microbiology. 1959.
Prescott, S. Industrial microbiology. 1959.

Biochemistry

Hoggman, W. S. Biochemistry of clinical medicine. 1959.
Luck, J. M. Annual review of biochemistry. 1960.
White, A. Principles of biochemistry. 1959.

Biography

Magnuson, P. Ring the night bell. 1960.

Cancer

Ariel, I. M. Cancer and allied diseases of infancy and childhood. 1960.
Blum, H. Carcinogenesis by ultra-violet light. 1959.
Field, J. Cancer diagnosis and treatment. 1959.
Raven, R. Cancer of the pharynx, larynx, and esophagus. 1958.

Dermatology

Lewis, G. Practical dermatology. 1959.
Sauer, G. Manual of skin diseases. 1959.
Sternberg, T. Modern dermatologic therapy. 1959.
Sutton, R. Diseases of the skin. 1956.

Diabetes

Joslin, E. The treatment of diabetes mellitus. 1959.
Joslin, E. Diabetic manual. 1959.

Gastrointestinal System

Allen, J. The physiology and treatment of ulcers. 1959.
Ross, S. Synopsis of treatment of anorectal diseases. 1959.

Genetics

Osborne, R. Genetic basis of morphological variation. 1959.
Peters, J. Classic papers in genetics. 1960.
Sinnott, E. Principles of genetics. 1958.

Books and periodicals will be sent anywhere in the state. You pay only the postage, four cents for the first pound and one cent for each additional pound.

Genitourinary System

Colby, F. Pyelonephritis. 1959.
Kenyon, H. The prostate gland. 1959.

Histology

Rodahl, K. Bone as a tissue. 1960.

History

Turner, E. S. Call the doctor. 1959.
Garrison, F. H. An introduction of the history of medicine. 1929 reprint.

Hypnosis

Ambrose, G. A handbook of medical hypnosis. 1958.
Gill, M. Hypnosis and related states. 1959.
Marmer, M. Hypnosis in anaesthesiology. 1959.

Today the rhythm of our life is too quick. In the immensity of the sea alone in a small boat you meet again your personality. It is not true that we are nothing in this world, but we are less than we think we are. When you are alone at sea you understand the valor, the pain and the happiness of the human being.—*Mirco Tapavica*

Personalities—IN KANSAS MEDICINE

Dr. William Menninger, Topeka, spoke at the Missouri Mental Health Conference on "Mental Health in a Modern Society" which was held in Jefferson City in September.

Dr. Mahlon Delp has been appointed chairman of the Department of Medicine at the University of Kansas School of Medicine and Medical Center in Kansas City. A member of the faculty since 1938, following his graduation, internship and residency at the Kansas school, Dr. Delp since 1952 has been in charge of the school's postgraduate medical education department which enrolled over 6,300 in its courses during the year ending June 30, 1960. He is a diplomate of the American Board of Internal Medicine and a fellow of the American College of Physicians.

Dr. Herbert Klemmer, Topeka, attended a meeting of the Mid-Continent Psychiatric Association in Little Rock, Ark., September 16-19.

Dr. DeMerle E. Eckart, of Hutchinson, Kansas was speaker at the September meeting of the Reno County Ministerial Alliance. The topic of his talk was "The Pitfalls of the Social Approach to the Prevention of Mental Illness."

Dr. Karl Menninger, Topeka, attended the Fourth International Criminological Congress, The Hague, September 5-8. Doctor Karl has been asked to act as a consultant in psychiatry to a research project on Insanity Procedures under the Law. The project is jointly sponsored by the School of Law and the Department of Psychiatry of Temple University's School of Medicine in Philadelphia. He has also been admitted to membership in the American Society of Criminology.

Dr. E. L. Compere of Chicago, president of the International College of Surgeons, has recently notified **Dr. R. G. Rate,** Halstead, that he has been appointed Vice-Regent for Kansas.

Drs. Edward Greenwood and **Joseph Satten,** Topeka, attended the Second United Nations Congress on the Prevention of Crime and Treatment of Offenders in England, August 8-20.

Dr. R. O. Brown, Atchison physician, is president-elect of the Flying Physicians Association which five years ago he helped to found. He will take office next September. He has been a director of the organization since its beginning and was a vice president last year. He was named at a recent FPA meeting at Wagoner, Okla.

The Flying Physicians Association has 1,600 members, a headquarters in Tulsa, Okla., and publishes a newsletter and a monthly magazine. Occasionally the members make "flights" to meeting places. Dr. Brown and his family have joined the group in flights to Cuba, Mexico and other convention sites.

Broad purposes of the FPA area:

1. To promote general aviation safety by example and teaching.
2. To stimulate pilot proficiency and knowledge.
3. To stimulate aviation consciousness and acceptance in our youth.
4. To encourage aviation activities within the medical and professional ranks.

You can't appreciate home till you've left it, money till it's spent, your wife till she's joined a woman's club, nor Old Glory till you see it hanging on a broomstick on the shanty of a consul in a foreign town.—*O. Henry*

A.M.A. Clinical Meeting in Washington

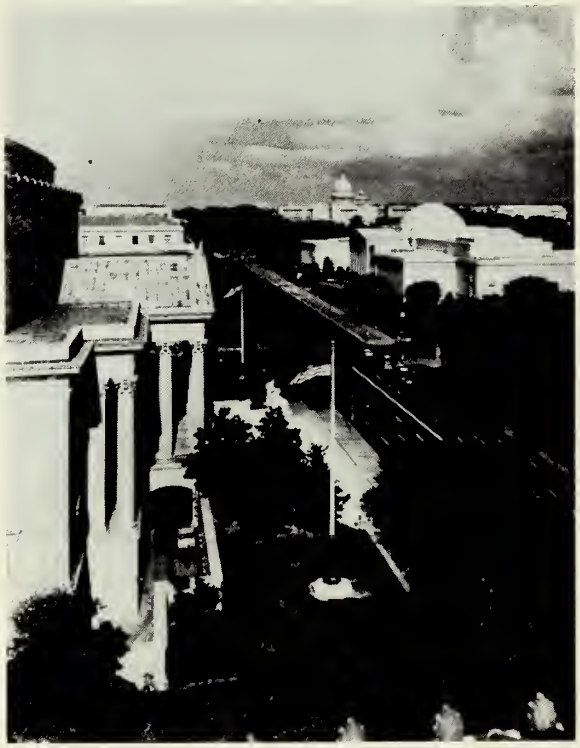
Washington, D. C., site of the 1960 clinical meeting of the American Medical Association, is a city of imposing dignity with a rich historical tradition.

Things to See

Its world famous landmarks, the Washington Monument, Lincoln Memorial, Capitol, and White House, are the city's biggest attractions. But the symmetrically laid out streets of the nation's capital lead to many other points of interest.

In the vicinity of the White House, grouped around Lafayette Square, are Blair-Lee House, the president's guest house; Decatur House, one of the few remaining mansions that originally lined the square; the Truxtum-Decatur Naval Museum; the former home of Dolly Madison, and St. John's Church where 13 presidents have worshipped.

An estimated 51,000,000 historical items are jammed into the Smithsonian Institution, located on the Mall which lies between Capitol Hill and the Lincoln Memorial. The collection, including Charles A. Lindbergh's plane, *The Spirit of St. Louis,* and stuffed game bagged by Theodore Roosevelt, has earned for the institution the nickname of "the nation's attic."



Washington, D. C., the nation's capital, will also be the capital of American medicine November 28-December 1 during the 14th Clinical Meeting of the American Medical Association. Hundreds of scientific and industrial exhibits, symposiums, lectures, and group discussions have been scheduled to appeal to the physician in family practice. Headquarters will be in the Sheraton-Park Hotel and most scientific activities will be held in the National Guard Armory.

The real historical charm of Washington is found in Georgetown. Many houses reflect the feeling of the colonial era. However, there is only one authentically furnished Colonial house open to the public all year round—Dunbarton House, a brick mansion built around 1800. Another of Georgetown's famous houses is Evermay, built about 1792.

Two other famous homes near Washington are Robert E. Lee's restored mansion in Arlington, Va., and the white-columned Mount Vernon of George Washington.

There are many places associated with the first president within easy reach of the capital. In nearby Alexandria are Christ Church, where Washington was a vestryman, and Gadsby's Tavern, his headquarters as a colonel in the Virginia Militia.

Gettysburg—New and Old

Just 80 miles from Washington is Gettysburg, Pa., scene of the greatest battle of the Civil War. Cannons still stand in place, and the sequence of events can be reconstructed from markers and tablets.

Other historically interesting towns, slightly farther from Washington, are Fredericksburg, Williamsburg, Charlottesville and Richmond in Virginia, and Annapolis, Md.

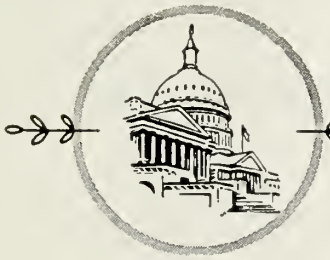
In addition to historical sights, most visitors to Washington go to Arlington National Cemetery to view the tombs of the unknown soldiers of three wars and take tours of the Supreme Court, the FBI and the Bureau of Engraving and Printing.

Washington also takes pride in its cultural attainments. It has many fine art galleries, among them the National Gallery of Art, the Corcoran Gallery of Art, Freer Gallery of Art and Phillips Memorial Gallery. It also has innumerable theaters and offers concerts by the National Symphony Orchestra and the Army, Navy, Air Force and Marine bands.

Washington has excellent restaurants, many featuring seafood from Chesapeake Bay. There are also French, German, Italian and Oriental restaurants in the capital.

An attractive feature of shopping in Washington are the frequent noon-time fashion shows in leading department stores.

(Continued on page 540)



Washington HIGHLIGHTS

This summary of Washington news is prepared by the A.M.A. Washington Office for distribution to state medical journals.

The federal government is offering states liberal matching funds to provide health care for needy and near-needy persons 65 years of age and older.

The program, which Congress approved in the bob-tailed post-convention session, is supported by the American Medical Association and allied health groups.

Labor Bill Defeated

Congressional approval of the federal-state program marked a victory for the medical profession and a defeat for Democratic Presidential Nominee John F. Kennedy, the AFL-CIO and other advocates of the Social Security approach to the problem.

In a key vote on the issue, the Senate rejected by a 51-44 vote a Kennedy proposal that would have provided hospitalization and medical care for the aged under the Social Security system. The Kennedy plan would have required an increase in payroll taxes.

Republicans and Southern Democrats joined in the Senate to defeat the Social Security approach which was opposed vigorously by the medical profession.

After voting down the Kennedy plan and a separate proposal of the Eisenhower Administration, the Senate passed a modified version of a House-approved program. The modifications, sponsored by Sen. Robert S. Kerr (D., Okla.) and others, provided for increases in the percentage of federal matching funds and for administrative changes designed to facilitate state participation.

Here's the Plan

Under the legislation as signed into law by President Eisenhower, **1.** substantial increases are authorized in federal grants to states to help with health care expenses of the 2.4 million persons on old age assistance rolls, and

2. Federal matching funds are offered the states to finance a new program of health care for an estimated ten million aged persons who are not on relief but whose incomes may be inadequate to take care of all their health costs.

Start of the program was authorized for Oct. 1 for those states where new state legislation is not required.

Administration of the program rests entirely with the states, subject to Federal approval in broad terms. It is up to each individual state whether it participates. Eligibility standards for beneficiaries and what health care services are provided are matters for the states to decide.

If a state so chooses, it can take care of all the health needs of an eligible beneficiary. The law authorized inpatient hospital services; skilled nursing home services; physicians' services; outpatient or clinic services; home care services; private duty nursing services; physical therapy and related services; dental services; laboratory and x-ray services; prescribed drugs, eyeglasses, dentures and prosthetic devices; diagnostic screening and preventive services, and any other medical care or remedial care recognized under state law.

Government to Give 50-80%

For medical expenses of persons on old age assistance rolls, the federal government will contribute 50 to 80 per cent—with states with low per capita income getting the larger percentages of federal aid —of an amount equal to $12 multiplied by the number of old age assistance recipients in a particular state.

The matching formula will be the same for financing the health care of the near-needy but there is no $12 limitation figure.

Health, Education, and Welfare officials estimated first-year costs of the program at $262 million—$202 million federal and $60 million state. Annual costs are estimated to rise by the end of the fifth year to $340 million federal and $180 million state. However, these estimates admittedly are no more than educated guesstimates because so much depends upon state action.

The medical-care-for-the-aged legislation was in-

cluded in an omnibus measure titled Social Security Amendments of 1960. It also eliminated the age 50 requirement for eligibility for disability insurance benefits.

The Senate knocked out of the House bill a provision that would have brought physicians under Social Security coverage.

Other Legislation

On other legislation of interest to the medical profession:

Congress passed bills authorizing expenditure of $10 million of counterpart funds abroad to stimulate international research; authorizing up to 15 per cent of National Institutes of Health research grants for non-governmental medical research; directing a broad study of air pollution problems; requiring informative labeling on packages of hazardous substances for household use, and giving the government power to establish a tolerance on the amount of color additives that may be used in various products.

The Senate failed to act upon House-approved legislation that would have given physicians and other self-employed persons a tax break on income put into private pension plans.

A.M.A. Clinical Meeting in Washington

(Continued from page 538)

All in all, autumn in Washington can be a delightful season for the physician and his family attending the AMA's 14th clinical meeting.

Top Scientific Program Planned for MDs

The clinical meeting will offer a well-rounded, stimulating scientific program designed to interest both family physicians and specialists. The symposia, presentations, and discussions will stress the theme, "New Developments in Old Diseases and Old Developments in New Diseases."

Participants will include proponents of both sides where different views exist on the management of a disease or medical condition. For example, should tonsils be removed when mildly involved or only when they are badly diseased?

The patient's side will also be heard on one symposium. Clarence B. Randall, an industrialist and special assistant to President Eisenhower, will talk on coronary disease from the patient's viewpoint.

The Problem of Management of Nodules, always perplexing for both the specialist and the family physician, will be discussed by three panels concerned with breast nodules, the solitary pulmonary nodule, and nodules of the neck.

Another panel will discuss Recent Advances of the Use of Antibiotics and Steroids, and additional symposia will cover areas in obstetrics-gynecology, pediatrics, edema, cirrhosis and liver diseases, renal problems, osteoporosis, thyrotoxicosis, eye problems, orthopedic surgery and trauma, clinical nutrition and bronchopulmonic disease.

Outstanding physicians and research scientists from throughout the nation will conduct the scientific program, and the timetable of discussions has been arranged so that physicians may attend the maximum number of sessions and participate in discussions in the particular fields in which they are most interested.

All the scientific sessions will be held at the District of Columbia National Guard Armory. Starting at 9:30 a.m., Monday, November 28, and running until 11:30 a.m., Thursday, December 1, three sections in both morning and afternoon will be held simultaneously in separate rooms at the Armory. One section will be devoted to presentations of formal papers, another to panel discussions, and the third will be a symposium, all of which have question-and-answer periods.

Another important and integral part of the clinical meeting will be the Scientific Exhibit which will contain approximately 125 exhibits in the Armory. Many of these will relate to such specific subjects as cardiovascular conditions, arthritis and rheumatism, and cancer. Others will be grouped into rather broad areas such as neurology and psychiatry, pediatrics, orthopedics, dermatology, drug therapy, surgery, ophthalmology and otolaryngology, obstetrics and gynecology, and laboratory and clinical investigation. Special demonstration exhibits on Fractures and Problems in Delivery will also be included.

Over 100 exhibits will make up the Industrial Exhibition, also in the Armory, where the products, services, and aids provided by industry to physicians and their patients will be on display and staffed by competent and knowledgeable attendants.

Medical motion pictures will be shown at the Armory, as well as closed color television showings originating in Georgetown University Hospital. Six one-hour TV presentations will be devoted to dermatology, pediatrics, emergency treatment of major injuries, newer methods of surgical treatment of peptic ulcer, orthopedics, and pathology.

Three scientific breakfasts will be held on both Tuesday and Wednesday at the Statler Hotel with the themes of "To Do or Not To Do" and "Problems of Management" in particular diseases or types of cases.

The entire scientific program of the Clinical meeting appears in the October 22 issue of the Journal of the American Medical Association.

KMS Obituaries

D. R. STERETT, M.D.

Dr. David R. Sterett, 80, Leavenworth, died July 27 at St. John's Hospital, following a year's illness.

Born March 11, 1880 in Iowa, he came to Kansas with his parents at an early age and received his early education at Sterling.

He attended Sterling College, Harvard School of Medicine, Washburn College, the University of Chicago, and graduated from the University of Kansas School of Medicine in 1907.

Coming to Leavenworth from Winchester in 1916, he has practiced 44 years.

He was a member of the First Presbyterian Church, Leavenworth County Medical Society and the Rotary Club. He received an award a short time ago from the Rotary Club for perfect attendance for more than a third of a century.

He was a member of the Leavenworth County Medical Society and a member of this Society since 1921.

Dr. Sterett is survived by his wife, Mrs. Annabel Sterett of the home; one son, Kenneth Sterett, RR 3; one sister, Mrs. Louise Morrow, Torrington, Wyoming; two grandchildren and two great grandchildren.

LEROY CALKINS, M.D.

Dr. Leroy A. Calkins, 66, of Fairway, died September 1 at the University of Kansas Medical Center after a very short illness. He had been a professor and chairman of the department of obstetrics and gynecology at the University of Kansas School of Medicine 30 years.

Dr. Calkins was graduated from Cornell College, Mount Vernon, Iowa, and the University of Minnesota. He was an associate professor of obstetrics and gynecology for three years at Minnesota, and for five years he was professor and chairman of the department in his specialty at the University of Virginia.

He went to the University of Kansas in 1929 where he was a member of Sigma Xi and Alpha Omega Alpha, scientific fraternities, and Phi Beta Pi, a medical fraternity.

He was a founding member of the Central Association and the American College of Obstetrics and Gynecology. Dr. Calkins twice served as president of the Kansas City Gynecological society and for 15 years was on the executive board of the American Association of Obstetricians and Gynecologists. He was president of the association in 1951-52.

He became a member of the Society in 1933 and was a member of the Wyandotte County Medical Society at the time of his death.

He leaves his wife, Mrs. Virginia Calkins of the home; four sons, Dr. Larry Calkins, Fairway; Dr. James P. Calkins, Tucson; David Calkins and John Calkins of the home; a daughter, Miss Kathy Calkins of the home; two brothers, Julius Calkins, National City, Calif., and Charles Calkins, Spring Valley, Calif.; a sister, Mrs. Donald Cowan, Minneapolis, and seven grandchildren.

N. A. BURKETT, M.D.

Dr. N. A. Burkett, 44, of Council Grove, died September 8, at the St. Joseph's Hospital in Kansas City, Mo., where he had been critically ill for several days.

He underwent surgery at the Council Grove hospital and because of complications, was taken to the Kansas City hospital.

Dr. Burkett, a practicing physician came to Council Grove from Junction City in January, 1947, after serving as the Geary County health officer for several years. He had engaged in general practice in Council Grove since that time.

He was a graduate of the University of Kansas Medical School and served in the European Theater in World War II with a medical unit. He became a member of the Society in 1942 and was a member of the Morris County Society at the time of his death.

Survivors include Mrs. Burkett and two daughters, Julie and Connie.

A. K. OWEN, M.D.

Dr. Arthur K. Owen, the first Topeka physician to specialize in the use of X-ray, died August 28 at Denver. He was 79.

He was born Feb. 9, 1881, in Illinois. He worked his way through college and the Yale School of Medicine and then served his internship in the New Haven General Hospital. In 1913 he came to Topeka to practice medicine. In World War I he served in the Medical Corps and his AEF ribbon had five battle bars. He returned to Topeka and installed an X-ray machine in 1919. For many years he was in partnership with Dr. Guy A. Finney.

Dr. Owen was a member of a number of professional organizations. He was a past president of the Shawnee County Medical Society, a fellow of the American College of Radiology and a diplomate of the American Board of Radiology.

He continued active in his profession, although on a limited scale, even after suffering two attacks of coronary thrombosis. He retired in 1957. He and Mrs. Owen sold their home and moved to Denver.

He became a member of the Society in 1921 and was a member of the Shawnee County Medical Society at the time of his death.

Blue Shield

Federal Employees Covered by Blue Shield

Blue Cross-Blue Shield led all other organizations in the enrollment of federal workers eligible for coverage under the Federal Employee Health Benefits legislation. More than 55 per cent of the estimated 1,695,000 federal workers who selected health benefits coverage from among the 38 programs available, chose to enroll in Blue Cross-Blue Shield.

This health insurance program for approximately two million federal employees and members of their families went into effect shortly after July 1, with the government paying between one-half and one-third of the cost. Each federal employee had free choice to enroll (or not to enroll) in one of two government-wide programs. One program provides service benefits, and for that, the government has contracted with Blue Cross-Blue Shield. In the other program, indemnity-type benefits were provided through commercial carriers.

A Vote of Confidence

Representatives of the National Blue Cross and Blue Shield Associations said that the selection of Blue Cross-Blue Shield by nearly a million federal employees represented "an overwhelming vote of confidence in these community oriented organizations" and made their programs the "coverage of choice."

It was also emphasized that the preference for Blue Cross and Blue Shield reflected in the choice of federal workers followed the pattern of leadership and popularity these plans have continued to display in the enrollment of large segments of the public at large.

Wanted High Level Protection

It can be noted that a breakdown of enrollment totals in both the Blue Cross-Blue Shield program and that offered by commercials, government employees chose the high level, higher cost benefits program in preference to the low benefits, lower cost option in a ratio of about four to one.

This would indicate that federal workers share with the public at large in their desire to have a comprehensive degree of coverage in preference to that of minimal standards and that apparently people are prepared to pay the additional price for broader forms of protection.

It is also pointed out that this is the first time the element of free choice involving such a variety of programs has been exercised by so many individuals at one time. "Neither group enrollment in industry nor individual enrollment campaigns on a community basis," Blue Cross-Blue Shield leaders said, "can be compared with this federal employee enrollment; and that is why the *vote of confidence* registered in the selection of Blue Cross-Blue Shield by nearly a million government workers, stands as remarkable evidence of the confidence that people have in the Blue Cross and Blue Shield organizations and in the voluntary hospitals and physicians who sponsor these programs."

How It Works in Kansas

Benefits

The Civil Service Commission necessarily stipulated that there was to be a reasonable degree of uniform-

ity of benefits (services covered) to insure all federal employees similar coverage. Two levels of benefits were established which are known as High and Low Option Plans which provide essentially the same benefits but differ in the amounts paid for covered services, and in the cost to the government employee. Also a "major medical" type of benefit was included to supplement the basic program.

THE BASIC BENEFITS ARE

Surgery—in the hospital or the doctor's office.

General anesthesia in the hospital or the doctor's office when administered by a physician *other than* the operating surgeon or his assistant.

In-hospital medical care for non-surgical illness.

Obstetrical care—Not including prenatal care.

Diagnostic x-ray in the doctor's office within 72 hours after an accident only.

Radiation therapy in the doctor's office, malignancies and non-malignant neoplasms.

The following services *are not covered under the Basic* Blue Cross-Blue Shield Plans:

Ambulance services.

Assistant surgeon.

Blood and blood plasma.

Consultation.

Cosmetic surgery—except as required by accidental injury occurring after effective date of membership.

Dental surgery.

Diagnostic admissions.

Diagnostic laboratory services in the doctor's office.

Diagnostic x-ray in the doctor's office (except for accident cases within 72 hours).

Drugs and medicine out of the hospital.

Home and office calls.

In-hospital medical care of TB and of mental conditions as limited to 30 days in the High Option and 10 days in the Low Option during any benefit period.

Local anesthesia, and anesthesia administered by the surgeon or his assistant.

Materials, appliances, supplies.

Oral surgery is limited to that not involving any tooth structure, alveolar process, periodontal disease, or abcess.

Workmen's Compensation cases.

SUPPLEMENTAL (MAJOR MEDICAL) BENEFITS

Supplemental benefits are provided for services not included in the basic Plans.

HIGH OPTION PLAN

After the member has paid $100 for services not paid for by the Basic Plan, the Major Medical Plan will pay 80 per cent of the charges made for all medical expenses, except as set forth below under limitations.

Maximum $10,000 per benefit period, $20,000 per person.

LOW OPTION PLAN

After the member has paid $200 for services not paid for by the Basic Plan, the Major Medical Plan will pay 75 per cent of the charges made for all medical expenses, as set forth below under limitations.

Maximum $2,500 per benefit period, $5,000 per person.

The "deductibles" are applicable to each member of the family. Under either option, covered services under Major Medical include home and office calls, consultation, assistant surgeon, prescription drugs, nursing service, diagnostic procedures, ambulance, prescribed appliances, etc.

Limitations of Supplemental Benefits

Benefits for cosmetic surgery and treatment and dental work is limited to that required to correct accidental injury occurring after the effective date of membership.

Benefit for nursing care is limited to that of a registered nurse *not* related to the patient. Maximum nursing allowance under the Low Option Plan is $500.

Benefits for treatment of mental disorders is limited to in-patient care, and 50 per cent of out-patient or out of hospital care in the High Option; and to in-patient care only in the Low Option.

Benefit for treatment of pulmonary tuberculosis is limited to in-patient care only.

How Payments Are Made

BASIC PLAN

Services covered under the Basic Blue Shield program for Federal Employees are to be reported to Kansas Blue Shield on the regular Service Statements. The "identification number" from the member's Identification Card should be reported on the Service Statements under "membership number." *Payment for basic services will be included on your regular Blue Shield check.*

MAJOR MEDICAL PLAN

The member should be billed for professional services not covered by the Basic Plan. It is the member's responsibility to submit a special "Major Medical Claim Form" and itemized statements and receipts to Blue Shield. The necessary forms may be obtained from the Blue Shield office by the member. A national administrative office will make payment

under the supplemental benefits portion of the program *directly to the member.*

New Doctor Relations Man

Kenneth Allen began work in September as the new Physician Relations Representative for Kansas Blue Cross-Blue Shield. He succeeds Herman Skelton who was named to the position of Assistant Director of Physician Relations following the resignation of Jim Parmiter. These changes were announced by Proctor Redd, Director of Hospital-Physician Relations.

Mr. Allen is a former teacher in the public schools in Salina. He and his family expect to make their home in Topeka.

Arthur S. Flemming, Secretary of Health, Education, and Welfare, will be the keynote speaker at the Annual Program Conference of Blue Shield Plans to be held October 10-11, 1960, at the Drake Hotel in Chicago.

A record attendance of more than 300 Blue Shield Plans' physician-trustees and executives, as well as state and local medical society officers and secretaries, are expected to hear Secretary Flemming talk on the subject, "Voluntary Health Plans Today and Tomorrow."

The two-day conference has as its theme "The Essentials of Leadership," and will consider such important subjects as "Blue Shield and American Medicine—A Partnership for Progress," "Identifying the Needs and Objectives Essential to Progress in Blue Shield," "Developing Executive Talent to Meet Future Management Needs," and "Government As a Purchaser of Health Care Benefits."

In addition to Secretary Flemming, leaders in industry and American medicine are being invited to participate in the conference. Acceptances have already been received from Dr. Norman A. Welch, Speaker of the House of Delegates of the American Medical Association, and Dr. Donald Stubbs, Chairman of the Board of the National Association of Blue Shield Plans and one of three recipients of the 1960 "Health-USA" award sponsored jointly by the Metropolitan Washington (D. C.) Board of Trade and the Medical Society of the District of Columbia.

The National Association stated that the October conference will replace the highly successful Blue Shield Professional Relations Conferences normally held each February. "This new conference arrangement, which combines the professional relations meeting with the annual program session of the Plans, will provide an invaluable means of enhancing physicians' knowledge and understanding of the many facets of Blue Shield management problems and will enable physicians to understand more fully the vital role they can play in shaping the future of their local Blue Shield Plans," the National Association reported.

From time to time a patient may ask you about a health protection program with lower monthly dues than Blue Cross-Blue Shield. When you hear this, have you ever asked him to compare the other program with the benefits he enjoys in Blue Cross-Blue Shield?

Also, to the patient who is *not* enrolled in Blue Cross-Blue Shield: Ask him to compare his present coverage with Blue Cross-Blue Shield by checking the following questions:

- Will the Plan pay the full cost of semi-private accommodations?
- Does the Plan cover in full other most important hospital services such as drugs, laboratory, operating room, oxygen, etc.?
- Does the Plan cover both the more frequent low cost illnesses and the less frequent high cost illnesses?
- Does the Plan provide 120 days per admission for general illness and accidents?
- Does the Plan provide at least 30 days per contract year for members over 65 and for mental and nervous illnesses?
- Does the Plan provide the same hospital coverage for maternity care as for other conditions?
- Does the Plan provide the same coverage for the member's spouse and unmarried children up to age 21?
- Does the Plan cover children from birth (including premature babies)?
- Will the Plan permit the member who changes jobs, moves or retires to continue his protection?
- How much of the dues is used to administer the Plan?

In spite of its sometimes troublesome nature, the digestive system is one of the most wonderful parts of the human body. Can you guess, for example, how small food particles are made before digestion is complete? The answer is that 4,000 such particles, side by side, would measure only one-tenth of an inch long—and 25 millionths of an inch wide!

For the third time since he took office, President Eisenhower signed a bill with press and newsreel cameras covering the event. This one was the measure that allowed the Treasury to raise interest rates on E and H bonds bought since June 1, 1959, to 3¾ per cent.

The Kansas Press Looks at Medicine

***Editor's Note.** In this section the* Journal *reproduces editorials relating to medicine which have appeared in the lay press. An effort is made to include both favorable and unfavorable comments, and the Editorial Board in no instance assumes responsibility for the opinions expressed.*

Hazard for Doctors

Officials of the American Medical Association are concerned about one constant hazard which physicians face in their practice—fake house calls by killers. In June a doctor at Dubuque, Ia., answered a call to a rooming house to treat a woman who was ill. The doctor's wife received a call two hours later, the caller telling her that the doctor would be detained on the call overnight. When the doctor did not arrive at his home or office the next day, his wife notified the police. Ten days later the bullet-pierced body of the physician was found on a farm ten miles from Dubuque. A month later an ex-convict was arrested in Alabama where he was trying to sell the doctor's car. The doctor's medical bag was in the car.

The *AMA News* said that crimes of this kind are more frequent than is generally realized. "Police blotters around the nation reveal a number of instances where doctors have been summoned on spurious house calls, only to be robbed or slugged by thieves or drug addicts," the *News* says.

Doctors loyal to their profession do not want to ignore appeals for help by persons who are suffering. Such doctors answer late calls as a matter of duty. The most ruthless and heartless criminals know this and so they set up traps as the one at Dubuque. Most doctors, probably, have learned to be extremely careful about such calls. They try to make certain that the calls are genuine and the need is real. Some that were not so careful have become victims of murderers.

The American Medical Association's law department recommends several steps to be taken when there are calls from strangers. Demanding the telephone number and address from which the call is placed is one. Calling back will reveal whether it was placed from a pay station. The telephone company can verify the location of a telephone number. A pay station call should alert the doctor to the possibility that it is a fake. Another suggestion is for police protection in answering an alleged emergency call. If a doctor on investigation convinces himself that it is a fake, he should notify the police and give the facts.

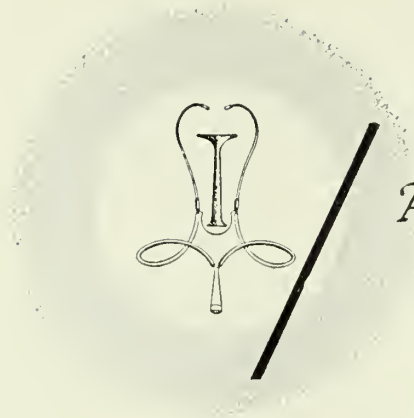
Criminals work many diabolic schemes for robbery purposes. Murder is not the object of such a crime but it is often a result of a robbery plot. No doctor should be criticized for failing to answer a call from a stranger unless he can veritfy its authenticity. A doctor who answers a blind call from a stranger places himself in the same position as a motorist who picks up a stranger who is trying to hitchhike on the highway.—*Pittsburg Headlight.* August 26, 1960.

But Babies Can't Read

President Eisenhower recently signed into law the Federal Hazardous Substances Labeling Act. Thus ended a 25-year struggle by the American Medical Association and other health groups to have poisonous products so labeled. This law declares that any hazardous product not so labeled is "misbranded"; is liable to seizure; and its manufacturer can be fined $3,000 and jailed for a year.

Such a law was badly needed as each year in the U. S. A. there are 200,000 accidental poisonings, resulting in 5,000 deaths. According to the U. S. Health Service, most accidental poisoning victims are children, and 43 per cent of all deaths among children

(Continued on page 547)



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the DOCTOR'S CALENDAR. *Notice of the session is posted in advance to allow the physician time to make preparations.*

Applications for Charter Membership in the American Society of Diagnostic Radiology are now being received. Membership is open to GENERAL PRACTITIONERS and INTERNISTS *who do or may desire to do some types of Diagnostic Radiology in their offices.*

For further information please write: Louis Shattuck Baer, M.D., F.A.C.P., 411 Primrose Road, Burlingame, Calif.

Competitive Examinations for appointment of physicians as Medical Officers in the Regular Corps of the United States Public Health Service Commissioned Corps will be held throughout the United State on *January 31, and February 1 and 2, 1961.*

Appointments provide opportunities for career service in clinical medicine, research, and preventive medicine-public health. They will be made in the PHS officer grades of Assistant Surgeon and Senior Assistant Surgeon, equivalent to Navy ranks of Lieutenant (j.g.) and Lieutenant, respectively.

Entrance Pay for Assistant and Senior Assistant Surgeons with dependents is nearly $8,000 a year (Assistant Surgeon applicants are assigned the temporary grade of Senior Assistant). *Promotions* are made at rapid intervals.

Benefits include periodic in-grade pay increases, 30 days annual leave with pay, sick leave with pay, full medical care, disability retirement pay, retirement pay (three-fourths of annual basic pay at time of retirement), and many other privileges.

Active Duty as a Public Health Service officer fulfills the Selective Service obligations for military duty.

Requirements are U. S. citizenship, and graduation from a recognized school of medicine. For the rank of Assistant Surgeon, at least 7 years of collegiate and professional training and appropriate experience are needed. For Senior Assistant Surgeon, an additional three years, for a total of at least 10 years of collegiate and professional training and appropriate experience, are needed. Applicant must be under 34 years of age for appointment to Assistant grade; under 37 for Senior Assistant grade.

Entrance Examinations will include an interview, physical examination, and comprehensive objective examinations in the appropriate professional fields.

Application forms may be obtained by writing to the Surgeon General, United States Public Health Service (P), Washington 25, D. C. Completed application forms must be received *no later than December 2, 1960.*

The American College of Chest Physicians will hold its annual Interim Session at the Shoreham Hotel in Washington, D. C. this November. The scientific sessions will be held on Saturday and Sunday, November 26 and 27. Monday, November 28, will be reserved for administrative sessions. Dr. M. Jay Flipse, Miami, Florida, President of the College, will preside.

Dr. Joseph W. Peabody, Jr., Washington. D. C., and his committee, have arranged a scientific program of exceptional interest including Symposia on Congenital Bronchopulmonary Disorders, The Role of Steroid Therapy in Chest Diseases, and Current Therapeutic Issues.

A highlight of the program will be the Fireside Conferences on Sunday evening, November 27. In addition, there will be three round table luncheon discussions on both Saturday and on Sunday. These will feature prominent speakers discussing various aspects of heart and lung diseases.

Cancer of the Uterine Cervix, Endometrium and Ovary

October 21 and 22, 1960

The fifth annual clinical conference for physicians will be held Friday, October 21, and Saturday, October 22, 1960, in the auditorium at The University of Texas M. D. Anderson Hospital and Tumor Institute, Texas Medical Center, Houston.

Registration: 8:15-9:15 a.m., Friday, October 21, at the auditorium of M. D. Anderson Hospital. Since the Rice-Texas football game will be played at Rice Stadium October 22, hotel reservations should be made in advance of the Conference. A limited number of rooms at the Shamrock-Hilton Hotel will be held for Conference registrants; these rooms should be obtained by sending reservations *directly to the hotel.* State on your room request that you are attending this Clinical Conference. For tickets to the Rice-Texas night game, contact the Athletic Office, Rice University.

Credit Hours: Members of the Academy of General Practice desiring credit for attendance at this conference must register in advance with The University of Texas Postgraduate School of Medicine, Jesse Jones Library Building, Houston, Texas. Ten hours of approved for Category I AAGP credit will be certified for attendance. A $5.00 registrar's fee must accompany the credit registration. Make checks payable to The University of Texas.

The Kansas Press Looks at Medicine

(Continued from page 545)

aged 2 and 3 are from poisonings. The USPHS attributes this terrific death toll to some 300,000 common household products not labeled with adequate warnings.

The AMA and the other health groups are to be commended for their persistence.

It strikes us, however, that their task is not finished. As products containing poison take such a heavy tool of 2 and 3 year old tots—at which tender age they've not yet learned to read—should there not be another law—one that would make it unlawful for mamas and papas of the nation to leave bottles and packages labeled "poison" where the youngsters can reach them; with penalties for the careless parents?

With both producers and parents facing penalties, accidental poisonings of our children would be greatly minimized.—*Conway Springs Star,* August 25, 1960.

M. V. Eggleston

Think on These

A man knows when he is justified, and not all the wits in the world can enlighten him on that point. —*Henry David Thoreau*

Peace is not absence of war, it is a virtue, a state of mind, a disposition for benevolence, confidence, justice.—*Spinoza*

Composing is like fishing. You get a nibble, but you don't know whether it's a minnow or a marlin until you reel it in.—*Jerome Kern*

Even though science may enable mankind to control its own evolution, the test tube will never replace passionate preference. As far into the future as I can see with my eyes shut, people are still pairing for love and money.—*Robert Frost*

Notice of Kansas Basic Science Board Examination

The Kansas Board of Basic Science Examiners will give examinations in the subjects of anatomy, bacteriology, chemistry, pathology and physiology on November 4-5, 1960, in Science Hall, Kansas State College, Pittsburg, Kansas. Satisfactorily completed applications for examination should be submitted at least 30 days prior to date of examination. Application blanks and other information can be obtained from Dr. L. C. Heckert, Secretary of the Kansas Board of Basic Science Examiners, Pittsburg, Kansas.

The Kansas Medical Society—1960-1961

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Clay	S. A. Anderson, Clay Center	Forrest D. Taylor, Clay Center
Cloud	M. C. Pearson, Concordia	F. P. Thornton, Jr., Concordia
Coffey	A. B. McConnell, Burlington	Henry J. Dick, Jr., Burlington
Cowley	G. L. Norris, Winfield	Edgar D. Hinshaw, Arkansas City
Crawford	R. W. Friggeri, Girard	Howard R. Elliott, Pittsburg
Dickinson	Fred Dozier, Herington	Roger D. Warren, Enterprise
Doniphan	Emerson D. Yoder, Denton	Robert L. Corder, Highland
Douglas	Howard L. Wilcox, Lawrence	James S. Reed, Lawrence
Edwards	M. Dale Atwood, Kinsley	F. G. Meckfessel, Lewis
Finney	J. W. Turner, Garden City	H. M. Wiley, Garden City
Ford	E. W. Schwartz, Dodge City	R. E. Speirs, Dodge City
Franklin	Louis N. Speer, Ottawa	David G. Laury, Ottawa
Geary	C. V. Minnick, Junction City	H. L. Bunker, Jr., Junction City
Greenwood	John H. Basham, Eureka	Robert L. Obourn, Eureka
Harvey	Frances A. Allen, Newton	Lee S. Fent, Newton
Iroquois	Ronald McCoy, Coldwater	Charles G. Stephens, Minneola
Jackson	E. C. Moser, Holton	M. Ross Moser, Holton
Jefferson	W. A. R. Madison, Nortonville	C. D. Townes, Perry
Jewell	C. S. Hershner, Esbon	R. M. Owensby, Mankato
Johnson	A. S. Reece, Gardner	R. E. Delphia, Olathe
Labette	V. L. Jackson, Altamont	J. D. Pace, Parsons
Leavenworth	Kenneth Powell, Leavenworth	J. M. Graham, Leavenworth
Lyon	K. L. Lohmeyer, Emporia	C. H. Munger, Emporia
McPherson	Weir Pierson, McPherson	W. J. Collier, McPherson
Marion	A. C. Eitzen, Hillsboro	R. L. Krause, Goessel
Marshall	J. W. Randell, Marysville	D. M. Diefendorf, Waterville
Miami	Rex Stanley, Paola	James Fowler, Osawatomie
Mitchell	H. B. Vallette, Beloit	J. F. Nienstedt, Beloit
Montgomery	William T. Read, Coffeyville	Albert E. Martin, Jr., Coffeyville
Morris	Robert W. Blackburn, Council Grove	James E. Schultz, Council Grove
Nemaha	V. E. Brown, Sabetha	Cecil C. Hunnicutt, Sabetha
Neosho	Reuben J. Burkman, Chanute	Donald E. Ray, Chanute
Northwest Kansas	Floyd L. Smith, Colby	Wayne G. Parker, Hoxie
Osage	Niles M. Stout, Lyndon	J. L. Ruble, Jr., Overbrook
Osborne	J. E. Hodgson, Downs	J. E. Henshall, Osborne
Pawnee	O. R. Cram, Larned	H. L. Patterson, Larned
Pottawatomie		Fred E. Brown, St. Marys
Pratt-Kingman	F. G. Freeman, Pratt	J. W. Jacks, Pratt
Reno	V. R. Moorman, Hutchinson	Tom W. Stivers, Hutchinson
Republic	P. L. Beiderwell, Belleville	H. D. Doubek, Belleville
Rice	David H. Rau, Lyons	P. E. Beauchamp, Sterling
Riley	Kenneth M. Boese, Manhattan	George S. Bascom, Manhattan
Rush-Ness	F. K. Bowser, La Crosse	R. E. Grene, La Crosse
Saline	Henry S. Dreher, Salina	Frederick A. Gans, Salina
Sedgwick	Clyde W. Miller, Wichita	Paul A. Kaelson, Jr., Wichita
Seward	Otto F. Prochazka, Liberal	Harold Dittemore, Liberal
Shawnee	W. O. Martin, Topeka	Richard Beach, Topeka
Smith	D. A. Hardman, Smith Center	V. E. Watts, Smith Center
South Central Tri-County	P. M. Hulett, Anthony	M. D. Christensen, Kiowa
Stafford	O. W. Longwood, Stafford	C. Everett Brown, Stafford
Washington		L. L. Huntley, Washington
Wilson	Raymond J. Beal, Fredonia	C. E. Stevenson, Neodesha
Woodson	A. C. Dingus, Yates Center	H. A. West, Yates Center
Wyandotte	Wray Enders, Kansas City	William W. Abrams, Kansas City

Infectious Mononucleosis

Adrenocortical Steroid Therapy

A. W. ROBINSON, M.D.; W. SLENTZ, M.D.; M. DODGE, M.D.; *and* A. V. ARMS, M.D., *Kansas City, Missouri*

A series of fifteen cases of infectious mononucleosis treated with a brief course of adrenocortical steroid drugs is reported with uniformly good results. Subjective symptoms of malaise and aching, and objective findings of fever, pharyngitis and lymphadenopathy rapidly receded.

INFECTIOUS MONONUCLEOSIS IS AN ACUTE infectious disorder of unknown etiology which runs a course from two to eight weeks' duration characterized by fever, sore throat, lymphadenopathy, and asthenia, and subsiding without sequelae. These symptoms may be exceedingly distressing to the patient and cause marked debility. Occasionally disturbing and serious complications occur and a few fatalities are on record.[1, 2]

Since no specific therapy in the past has been found to alter the course of this disease significantly, treatment has always been of a symptomatic and supportive nature. Chemotherapy, antibiotics, convalescent serum, and gamma globulin have all been used to no avail. Adrenocorticotropin and the adrenocortical steroids have been employed in the treatment of infectious mononucleosis since 1951 with encouraging results and, in some instances, this therapy was stated to be dramatic and lifesaving.[3] A number of isolated case reports and a few case series are recorded. [4-11]

It is the purpose of this paper to present our experience with adrenocortical steroid therapy in 15 cases of infectious mononucleosis dating from 1952.

CASE HISTORIES

Case No. 1

A 20-year-old girl was first examined January 28, 1952, with the chief complaint of jaundice of two days' duration. She gave a history of becoming ill one week prior to this time with a respiratory infection manifested by a sore throat, chills, nausea, vomiting, headache, fatigue, and malaise. Physical examination revealed a generalized icterus and minimal generalized lymphadenopathy. The liver was enlarged two cm. below the right costal margin and was non-tender. The spleen was enlarged four cm. below the left costal margin. Laboratory studies showed the following by days: *1-28* hemoglobin 58 per cent, rbc 2,900,000, wbc 2,500, lymphocytes 51, neutrophils 47, monocytes two; *2-1* hemoglobin 66 per cent, rbc 3,200,000, wbc 4,700, lymphocytes 69, neutrophils 29; *2-12* hemoglobin 66 per cent, rbc 3,600,000, wbc 2,900, lymphocytes 78, neutrophils 22; *2-16* hemoglobin 54 per cent, rbc 2,500,000, wbc 3,800, lymphocytes 85, neutrophils 15; *2-19* hemoglobin 37 per cent, rbc 1,800,000, wbc 1,700; *2-20* hemoglobin 48

From the Department of Medicine, St. Luke's Hospital, Kansas City, Missouri.

per cent, rbc 2,500,000, wbc 4,200, lymphocytes 68, neutrophils 29; *2-23* hemoglobin 62 per cent, rbc 2,900,000, wbc 4,800, lymphocytes 34, neutrophils 60, monocytes 6; *2-26* hemoglobin 72 per cent, rbc 3,400,000, wbc 5,700, lymphocytes 72, neutrophils 25; *3-15* hemoglobin 82 per cent, rbc 4,100,000, wbc 7,300, lymphocytes 80, neutrophils 18; *3-10* hemoglobin 74 per cent, rbc 3,600,000, wbc 5,100, lymphocytes 50, neutrophils 49; *1-28* urinalysis—trace of albumin, otherwise negative. Sedimentation rate was 15 mm. in one hour (Westergren), thymol turbidity 0, total protein 6.35 gm., albumin 3.5, globulin 2.8, AG ratio 1.2, blood cholesterol 134 mg. per cent, and the cholesterol esters 48 per cent. The prothrombin time was 100 per cent of normal, cephalin flocculation 4+, serum bilirubin 13.1 mg., direct 5.3, and the indirect 7.8. On *2-2* serum bilirubin was 14.05, the direct 4.7, and the indirect 9.35. *2-22,* serum bilirubin 3.95, direct 1.25, and the indirect 2.70. On *3-1* serum bilirubin was 2.25, direct 0.45, and the indirect 1.8. On *1-28* the heterophil antibody was 1-896, and the guinea pig adsorption 1-448. *2-2,* heterophil antibody 1-1792, guinea pig adsorption was 1-896. *2-7* heterophil antibody 1-3584, guinea pig adsorption 1-3584. On *2-11* heterophil antibody 1-7168, guinea pig adsorption 1-1790. *2-15* heterophil antibody 1-3584, guinea pig adsorption 1-448. *2-21* heterophil antibody 1-448, guinea pig adsorption 1-448. *2-23* heterophil antibody 1-448, guinea pig adsorption 1-112. *2-26* the blood platelets were 54,880; *3-3* blood platelets 100,-880. Coomb's test *2-20* positive. On *2-27* and *3-3* the Coomb's test direct and indirect was negative. On *2-27* the red cell fragility test was, initial 48, complete 30; control, initial 44, complete 30.

Course in the Hospital

During the first three weeks *(Figure 1),* the temperature spiked between 103 and 105 daily with frequent chills. The liver and spleen gradually enlarged and jaundice persisted. The patient was given a therapeutic course of chloromycetin for five days and later penicillin and streptomycin without improvement. Because of the progressive anemia, blood transfusions were initiated on *2-11* and the patient received five pints of blood in all. On *2-19,* the patient was thought to be critical with temperature of 104 degrees, pulse 140 regular, anemia, and prostration. On *2-20,* ACTH was started, 20 mg. every six hours for a total of 80 mg. daily for six days. This was subsequently reduced to 60 mg. daily for six days, then 40 mg. daily for four days, and tapered off to 20 mg. daily for four days. Following the institution of ACTH, immediate clinical improvement was noted with improved appetite and a sense of well being. Fever gradually fell by lysis in four to five days' time to normal. The spleen and liver rapidly diminished in size and, at the time of dismissal, *3-11,* the spleen was barely palpable and the liver was noted to be enlarged only one cm. below the right costal margin. The jaundice rapidly abated. Blood count returned to normal by *3-11.* At the time of dismissal, other than fatigue, the patient felt well.

Figure 1. Response of Hemolytic Anemia to ACTH Therapy in a Patient with Infectious Mononucleosis.

Case No. 2

A 21-year-old boy was hospitalized from 2-4-54 to 2-26-54 with a history of having been ill for approximately one month's time with a sore throat, malaise, and fever. Examination revealed a generalized lymphadenopathy with prominent tender posterior cervical lymph nodes, temperature 102°, an exudative pharyngitis, and tenderness with fist percussion over the liver—otherwise essentially negative. Laboratory studies revealed the blood smear to show a predominance of lymphocytes with over 25 per cent leukocytoid lymphocytes present. The heterophil antibody titer was positive 1-1792, guinea pig adsorption 1-1792. BSP five mg. per cent liver function study, 19 per cent uptake. Cephalin flocculation was 4+, and hemoglobin 91 per cent, rbc 4,860,000, and wbc 10,200. The remaining studies were normal including urinalysis, NPN, fasting blood sugar, blood cholesterol, blood platelets, serum proteins with AG ratio, prothrombin time, serum bilirubin, and chest x-ray.

He ran a fever in the hospital from 102° to 103° daily with chills and complained of a sore throat. He showed no improvement with a five day course of tetracycline orally. Cortisone was then instituted, 25 mg. four times daily for a total of three days. Dramatic improvement was noted with the temperature regressing to normal in 48 hours and the lymph

nodes rapidly regressing in size and considered to be within normal limits in four days' time. On the fourth day at the termination of his cortisone therapy, all symptoms had disappeared except that of asthenia. He was still complaining of fatigue three weeks later when seen on an office checkup. A blood smear at that time was normal.

Case No. 3

A 15-year-old girl was hospitalized from 2-2-56 to 2-14-56 with a history of fever up to 103°, chills malaise, and sore throat of four days' duration. Physical examination revealed a membranous pharyngo-tonsillitis, enlarged tender anterior and posterior cervical lymph nodes, and the tip of the spleen palpable. Laboratory studies revealed a blood smear with a total of 77 lymphocytes, many leukocytoid lymphocytes present. Blood platelets were 108,000. The heterophil antibody was 2-9, positive 1-56, and the guinea pig adsorption positive 1-14. The following studies were normal, including urinalysis, agglutinations for typhoid, paratyphoid, brucellosis, and proteus OX 19, blood serologic test for syphilis, blood culture, thymol turbidity, serum bilirubin, serum proteins, EKG, and chest x-ray.

During her diagnostic workup in the hospital, she spiked a temperature and chilled from 101° to 103° for the first six days. At this time ACTH was given, 40 units daily for the first four days, tapering to 20 units daily for two days, then discontinued. Prompt symptomatic improvement was noted, the temperature fell to normal in 24 hours' time, lymph nodes regressed to normal in three days' time, spleen no longer palpable after three days, and her sore throat had cleared at the time of her hospital dismissal. She still noted easy fatigability.

Case No. 4

The patient was a 24-year-old boy who was hospitalized from 6-26-56 to 7-2-56. He had been first examined *6-22* at which time he complained of aching, recurrent fever, sore throat, and sores in his mouth of three days' duration. Examination revealed temperature of 103°, aphthous ulcer left side of tongue, generalized erythema and edema of the throat with a white patchy membrane overlying the left tonsil, tip of the spleen palpable, liver enlarged one cm. below the right costal margin and tender to fist percussion, and tender enlarged anterior cervical lymph glands. Laboratory examination revealed the blood smear to show a predominance of lymphocytes with many atypical leukocytoid lymphocytes present. The hemoglobin was 109 per cent, rbc 5,400,000, and wbc 5,200. On *6-26,* heterophil antibody positive 1-224, and the guinea pig adsorption was 1-56. The following studies were normal, including blood Wassermann, sedimentation rate, NPN, fasting blood sugar, serum proteins, EKG, and chest x-ray. He was given a course of tetracycline for three days without improvement.

On *2-29,* with his temperature still running 100° to 102°, cortisone, 25 mg. four times daily, was started for a course of three days. His fever, pharyngitis, and lymph nodes all receded in 72 hours' time and, other than fatigue, he was feeling well at the time of dismissal. Hepatosplenomegaly was no longer evident. He was able to return to his job one week later.

Case No. 5

A 16-year-old boy was hospitalized from 4-10-57 to 4-25-57. He gave a history of having had sore throat, malaise, generalized aching, fever, swelling of the face and hands, severe headache, and nonproductive cough for three weeks prior to his admission to the hospital. Physical examination revealed the temperature 101°, a few petechiae noted on the soft palate, moderate generalized lymphadenopathy, gray-yellow patchy membrane overlying the pharynx and tonsils—otherwise negative. Laboratory examination revealed the following: hemoglobin 86 per cent, rbc 4,070,000, wbc 4,900 with 14 lymphs, leukocytoid lymphocytes 18, neutrophils 61, monocytes three, eosinophils three, basophils one; platelets 66,000; urinalysis—many rbc per hpf—otherwise negative. On *4-11,* the heterophil antibody was positive 1-112, and the guinea pig adsorption positive 1-112. The following studies were within normal limits including sputum culture, thymol turbidity, prothrombin time, serum bilirubin, cephalin flocculation, NPN, fasting blood sugar, blood cholesterol, creatinine clearance kidney function study. A chest x-ray revealed an exudative pneumonitis in the left lower lobe. Intravenous pyelogram was negative. The heterophil was positive 1-896 on *4-15,* guinea pig adsorption 1-896.

He was given a course of tetracycline followed by penicillin and streptomycin without benefit. He continued to run a fever daily from 99° to 101° and his pharyngitis continued to be distressing. On *4-17,* he started on a seven day course of ACTH 40 mg. daily. His temperature dropped to normal in the first 24 hours, throat symptoms and general aching rapidly abated in two to three days' time. He was feeling well at the time of his hospital dismissal. The chest had cleared completely by x-ray examination. On the day of his dismissal, urinalysis again showed microscopic hematuria with 10-12 rbc per hpf but was otherwise normal.

Case No. 6

An 18-year-old girl was seen at her home 7-15-59, with a temperature of 101° and a severe diffuse pharyngeal erythema. She was advised to follow

a program of bedrest and symptomatic care. The patient was seen again on *7-18,* at which time a membranous pharyngitis was noted. Her symptoms persisted. On *7-23,* the dirty white membrane over the pharynx and tonsillar areas was more prominent and large tender lymph glands were noted in both the anterior and cervical chain. Her temperature persisted to run between 100° and 101° daily. A blood smear revealed many leukocytoid lymphocytes present. On *7-15,* the heterophil antibody was positive 1-112, and the guinea pig adsorption differential was positive 1-112, *7-25* the heterophil antibody positive 1-3584, guinea pig differential positive 1-792. Hg. 13.6 gm., rbc 4,520,000 and wbc 4,900. The following studies were normal including urinalysis, serum bilirubin, serum protein, thymol turbidity. Cephalin flocculation positive 3+ in 48 hours.

She was started on a program of ACTH 80 units daily with methylprednisolone 16 mg. daily. Her fever abruptly returned to normal and the throat symptoms and lymph nodes disappeared in five days' time. However, she persisted in complaining of extreme exhaustion. Methylprednisolone was reduced after ten days to 12 mg. daily for another ten days. She complained of great fatigue and exhaustion for approximately two months after the initiation of adrenocortical steroid therapy.

Case No. 7

A 21-year-old boy was seen at home 9-1-58 complaining of extreme pain in the left hypochondrium and left flank with radiation into the left shoulder on inspiration. Physical examination revealed the temperature 100° and moderately enlarged tender posterior cervical lymph nodes. Tenderness without rebound was present in the left upper quadrant of the abdomen. He did not have a pharyngitis and the spleen was not palpable. A blood smear showed a preponderance of atypical lymphocytes (leukocytoid lymphocytes), hemoglobin 102 per cent, rbc 4,900,000, wbc 11,500, 73 lymphs, 27 neutrophils and a chest x-ray and electrocardiogram were normal while the heterophil antibody was positive 1-1790, and the guinea pig differential was 1-1790.

His pain was so severe that he required morphine gr. ⅙ on two occasions. On *9-4* he was started on triamcinolone 16 mg. daily and was given one injection of 80 units of ACTH on that date. His temperature returned to normal in 24 hours and the lymphadenopathy rapidly receded. The pain and tenderness in the left abdomen disappeared in 48 hours. In four days' time only a few small nodes were present in the left posterior cervical region. After four days' treatment the triamcinolone was reduced to 12 mg. daily for two days followed by 8 mg. daily for two more days. A blood smear on *9-17* was considered normal.

Case No. 8

A 20-year-old woman was first seen at her home 3-10-58 with the history of a sore throat, fever, malaise, stuffy nose, and epigastric distress of one week's duration. Physical examination revealed a temperature 100°, erythematous pharynx, enlarged, tender posterior cervical lymph nodes—otherwise negative. She was placed on an empiric course of tetracycline without improvement. She was seen again *3-13* with a generalized icterus. The liver was enlarged two cm. below the right costal margin and tender. The patient was hospitalized 3-13-58 to 3-29-58. Her laboratory studies revealed: hemoglobin 84 per cent, rbc 4,320,000, wbc 17,000 with neutrophils 25, lymphs 74, many atypical lymphocytes present, the heterophil antibody positive 1-896, guinea pig differential 1-896, serum bilirubin elevated 3.5 mg., direct 1.4, indirect 2.1, and the thymol turbidity 8 units. The following studies were normal: urinalysis, fasting blood sugar, NPN, cholesterol and serum proteins.

On *3-14,* she was started on ACTH 80 units daily for four days. On *3-17,* prednisolone was added 20 mg. daily for ten days, then 10 mg. daily for seven days. Following the start of adrenocortical steroid therapy, her temperature, lymph glands, and pharyngitis rapidly abated in three days' time. Her jaundice gradually receded over a 20 day period.

Case No. 9

A 22-year-old woman was seen in the office 2-18-58 with a history of fever 101°, generalized tender lymphadenopathy, and malaise of two weeks' duration. She had been hospitalized elsewhere for a week where a heterophil antibody was reported positive 1-448, and guinea pig differential 1-448. Blood smear then showed many atypical lymphocytes present. She was continued on symptomatic therapy. She tried to return to work *2-22* but her fever returned to 101° and she still complained of extreme exhaustion, aching, and tender glands in her neck. On *2-24,* she was started on 40 units of ACTH daily for six days. In 48 hours the lymph nodes had disappeared and her temperature had returned to normal. At the end of this treatment period, she was able to return to her former work capacity and, other than mild fatigue, felt well.

Case No. 10

A 20-year-old woman was seen 5-29-59 at her home with a history of two weeks' fever 101° and 102° daily, malaise, and generalized aching. Physical examination revealed the temperature 101°,

large tender glands in the anterior cervical chain bilaterally—otherwise general exam not remarkable. A blood smear showed wbc 10,700, 52 lymphocytes with many leukocytoid lymphocytes. A heterophil antibody was positive 1-896, and the guinea pig differential 1-224.

She was placed on a course of tetracycline without benefit. She was seen again *6-2* at which time both anterior and posterior cervical lymph glands were quite large and tender, temperature 101°, and the presence of a dirty, patchy white membrane was noted in the pharyngo-tonsillar region. At this time methylprednisolone was started, 16 mg. daily, and continued for a six day period. The temperature returned to normal in 24 hours' time and the pharyngitis disappeared in three days' time. The lymph nodes rapidly receded in this period of time but minimal lymphadenopathy was still apparent 10 days later. The patient continued to feel fatigued for about three weeks following the cessation of her severe symptoms.

Case No. 11

A 16-year-old girl was examined 5-25-59 complaining of fatigue, low grade fever of 100° and tender glands in her neck for two weeks' duration. She stated she had had a recurrent fever and malaise for approximately two months preceding her office visit. Examination revealed her temperature 100°, enlarged tender anterior and posterior cervical and axillary lymph glands. Her pharynx appeared normal. Examination otherwise was negative. The blood smear revealed many Downey cells. The heterophil antibody was positive 1-1792, and guinea pig adsorption positive 1-1792.

On *5-27,* the patient was given 40 units of ACTH and 12 mg. of triamcinolone daily for a four day period. Her temperature returned to normal in 36 hours, lymph glands normal size in 48 hours, and she felt vastly improved after three days of this therapy. Other than fatigue, there was no recurrence of her symptomatology.

Case No. 12

A 16-year-old boy was hospitalized from 10-27-59 to 10-31-59 with a history of a severe sore throat, headache, generalized aching, malaise, nasal discharge, fever, and tender glands in his neck of two days' duration. Examination revealed a temperature 102°, red edematous pharynx and tonsils covered by a stippled patchy, gray-white membrane, moderate generalized tender lymphadenopathy —otherwise not remarkable. His blood smear revealed 62 per cent lymphocytes (many atypical lymphocytes), neutrophils 33, and monos 11. Heterophil antibody was positive 1-224, and guinea pig differential 1-112. The following laboratory studies were normal: thymol turbidity, serum bilirubin, NPN, blood cholesterol, urinalysis, fasting blood sugar.

After a four day course of penicillin without benefit, he was given ACTH 40 mg. intramuscularly and hydrocortisone 100 mg. intravenously. His sore throat and fever rapidly abated in 48 hours' time. When seen in the office one week later, the lymphadenopathy and fever had completely disappeared and he was feeling well.

Case No. 13

A 21-year-old boy was first seen 12-19-59 with an eight day history of malaise, temperature elevation to 101°, sore throat, and tender glands in his neck. Examination revealed anterior and posterior tender lymph nodes, temperature 101°, an exudative pharyngitis—otherwise negative. Laboratory studies showed wbc 8,900 with many leukocytoid lymphocytes present. The heterophil antibody was positive 1-3584, and guinea pig differential 1-3584.

He was started on a course of tetracycline and triamcinolone 16 mg. daily for four days. Initially he was given two doses of ACTH, 80 mg. each. In 48 hours' time, the patient felt vastly improved with temperature normal and body aching absent. The sore throat had disappeared in three days' time. When examined two weeks later, a few shotty lymph nodes were noted both in the anterior and cervical chain but otherwise he appeared normal and felt well.

Case No. 14

An 18-year-old girl was first seen in the office 8-6-59 with a five day history of headache, generalized body aching, malaise, and fever. Physical examination revealed moderately enlarged tender anterior and posterior cervical nodes, temperature 99.6° —otherwise negative. A blood smear revealed an occasional leukocytoid lymphocyte with a total white count of 6,000, heterophil antibody was positive 1-28, and guinea pig differential positive 1-28. The patient was given symptomatic care and subsequently was hospitalized 8-8-59 to 8-12-59. In the hospital, a blood smear showed wbc 5,800 with 70 per cent lymphocytes and many Downey cells present. On *8-10,* the heterophil antibody was positive 1-3584, and guinea pig differential 1-3584. Other studies were normal, including hemoglobin, RBC, VDRL, NPN, chest x-ray, skull x-ray, and EKG. Her temperature continued to run between 100° and 101° and she felt quite ill.

On *8-12,* she was given one injection of 40 mg. ACTH and started on methylprednisolone, 16 mg. daily for a period of eight days, then eight mg. daily for another eight days. Her temperature returned to normal within a 48 hour period. The lymph

nodes rapidly receded. After four days on this therapy, patient felt well except for fatigue. On *8-20,* the only physical finding was minimal anterior and posterior cervical lymphadenopathy.

Case No. 15

A 15-year-old boy was first seen 5-20-60 in his home with a history of severe sore throat, temperature elevation to 103°, a red inflamed pharynx with a patchy, gray-white membrane present, anterior-posterior cervical and axillary lymph nodes moderately enlarged and tender—otherwise the exam not remarkable. His therapy was initiated with a three day course of tetracycline without benefit. On *5-24* a blood smear revealed many leukocytoid lymphocytes present, the heterophil antibody was positive 1-448, and guinea pig adsorption positive 1-448.

He was given 80 mg. of ACTH and started simultaneously on methylprednisolone, 16 mg. daily for a five day course. His temperature returned to normal and the pharyngitis disappeared in 72 hours. Three days after cessation of the cortisone therapy, his generalized aching recurred and his temperature returned to 101°. He also had a mild exacerbation of his pharyngitis. On the following day, he was again given an identical course of ACTH 80 units in one injection and methylprednisolone 16 mg. daily for five days. The temperature elevation and pharyngitis again rapidly receded in 48 hours' time. Patient felt well other than fatigue thereafter.

Comment

The definitive diagnosis of infectious mononucleosis is based on the presence of three factors: typical clinical picture, characteristic hematologic findings, and positive heterophil antibody test. The clinical picture essentially includes malaise, fever, lymphadenopathy with the posterior cervical nodes almost always involved, pharyngitis, and not infrequently a palpable spleen. The typical blood smear shows a predominance of lymphocytes and 15 per cent or more atypical lymphocytes (leukocytoid lymphocytes). A heterophil antibody test after guinea pig adsorption is considered to be positive at a titer of 1-56.[12] If only two of the above three factors are present in a given case, then the diagnosis of infectious mononucleosis is a presumptive positive. One case *(Case No. 3)* in our series is listed in the latter category.

Our first experience using ACTH occurred in a critically ill patient *(Case No. 1)* who had infectious mononucleosis complicated by panhematocytopenia and hemolytic anemia. The results of adrenal stimulation in this patient, initiated after three weeks of progressive deterioration, were so dramatic with rapid subsidence of fever, malaise, and reversal of the hemolytic process that we felt justified in using this form of treatment in subsequent selected cases of infectious mononucleosis. In our series *(Table 1)* rapid subjective improvement was noted, beginning in the first 24 to 48 hour period following the commencement of treatment. An increased sense of well being, improved appetite, greater strength, less fatigue and asthenia, and improved mental outlook were commonly observed. Objectively, from one to four days' time, fever abated, pharyngitis, anginal pain, and edema receded, and lymphadenopathy diminished. In some instances the rapid melting away of enlarged lymph nodes and exudative pharyngitis seemed almost miraculous. In only one case *(Case No. 15)* was there a relapse of fever and pharyngitis following a five day course of ACTH and methylprednisolone. In this instance, fever and pharyngitis again promptly responded to a second course of adrenocortical steroid therapy. Despite the prompt response to this form of treatment, residuum of an exudative pharyngitis and minimal adenopathy often persisted from one to three weeks. Nevertheless, when treated in this manner, the patients generally felt a sustained improvement and it was our impression that convalescence usually was shortened. In cases No. 1 and No. 4 with hepatosplenomegaly and jaundice, the liver and spleen rapidly diminished in size and the jaundice receded following the initiation of therapy with adrenocortical steroids. The one case *(Case No. 5)* of microscopic hematuria and presumed associated nephritis as a complication of infectious mononucleosis did not improve rapidly as far as the urinary picture was concerned.

The choice of therapeutic agent, ACTH, cortisone, cortisone analogue, or the combination of ACTH and cortisone, seemed to make little difference in the clinical result, all agents being equally effective. These drugs were given in varying dosage, 20 to 80 mg. of ACTH daily, 50 to 100 mg. of cortisone or equivalent dosage of the cortisone analogues for an approximate period of time varying from one to twenty days. On the average, the adrenocortical steroids were given for a period from five to seven days, gradually diminishing the dose after the first four days, the average dose of ACTH being 40 mg. and cortisone 100 mg. daily in the first four days. No complications of short term corticosteroid therapy were observed in our series and, in reviewing the literature on the subject, complications rarely occurred. Corticosteroid therapy did not appear to have any definite effect on the laboratory findings, including the blood smear and the heterophil antibody. The usual symptomatic care was instituted in all our cases, *i.e.,* restricted activity during the active febrile stage, diet and liquids as tolerated, warm alkaline or saline gargle solutions, and analgesic drugs. Various antibiotics often were used early, before a definitive diagnosis was made and concomitantly with adrenosteriod therapy in several cases, with the intent of combating secondary bac-

TABLE I

CLINICAL FINDINGS

Case Year	Age Sex	Lymph Nodes	Pharyngitis	Spleen	Liver	Blood Smear	Heterophil Antibody Adsorbed	Agent	Dose, Mg.	Antibiotic	Comments
1 1951	20 F	+	+	+	+	+	1/3584	ACTH	80 i.m. for 6 days gradually decreased	Chloromycetin Penicillin Streptomycin	Critically ill, complicated by hemolytic anemia and panhematocytopenia. Dramatic immediate response to ACTH
2 1954	21 M	+	+	–	–	+	1/1792	Cortisone	100 p.o. for 3 days	Tetracycline	BSp 19% ceph-floc. 4+. Fever abated 2 days, nodes, pharyngitis regressed 4 days after cortisone started
3 1956	15 M	+	–	+	–	+	1/14	ACTH	40 i.m. for 4 days decreased for 2 days		Afebrile after first day of Rx. Prompt symptomatic improvement
4 1956	24 M	+	+	+	+	+	1/56	Cortisone	100 p.o. for 3 days	Tetracycline	Fever, pharyngitis and nodes receded in 3 days after start of cortone
5 1957	16 M	+	+	–	–	+	1/896	ACTH	40 i.m. for 7 days	Tetracycline Penicillin Streptomycin	Pharyngitis and malaise absent after 3 days of ACTH. Persistent microhematuria
6 1958	18 F	+	+	–	–	+	1/1792	ACTH Methylprednisolone	80 i.m. stat., 16 p.o. for 10 days, decreasing for 10 days		With Rx objective findings abated in 5 days, marked asthenia slow to respond
7 1958	21 M	+	–	–	–	+	1/1792	ACTH Triamcinolone	80 i.m. stat., 16 p.o. for 4 days decreasing for 4 days		Severe pain lt. hypochondrium and fever absent after 2 days Rx
8 1958	20 F	+	+	–	+	+	1/896	ACTH Prednisone	80 i.m. for 4 days, 20 p.o. for 4 days decreasing for 8 days	Tetracycline	Prompt clinical response of pharyngitis and nodes to corticosteroids, icteric hepatitis slowly receded

TABLE I *(Continued)*

CLINICAL FINDINGS

Case Year	*Age Sex*	*Lymph Nodes*	*Pharyngitis*	*Spleen*	*Liver*	*Blood Smear*	*Heterophil Antibody Adsorbed*	*Agent*	*Dose, Mg.*	*Antibiotic*	*Comments*
9 1958	22 F	+	–	–	–	+	1/448	ACTH	40 i.m. for 6 days		Lymph nodes and fever normal in 48 hrs. with Rx
10 1958	22 F	+	+	–	–	+	1/224	Methylprednisolone	16 p.o. for 6 days	Tetracycline	Pharyngitis and fever normal in 72 hours with corticoid Rx
11 1958	16	+	–	–	–	+	1/1792	ACTH Triamacinolone	40 i.m. stat., 12 p.o. for 4 days		Symptomatic and objective improvement almost complete in 3 days with Rx
12 1959	16 M	+	+	–	–	+	1/112	ACTH Hydrocortisone	40 i.m. stat., 50 i.v. for 2 doses		Dramatic relief in 48 hrs. with only one day of Rx
13 1959	21 M	+	+	–	–	+	1/3584	ACTH Triamcinolone	80 i.m. for 2 days 16 p.o. for 4 days	Tetracycline	After 3 days' corticosteroid Rx pharyngitis and aching absent. Shotty nodes persisted 2 weeks
14 1959	18 F	+	–	–	–	+	1/3584	ACTH Methylprednisolone	40 i.m. stat., 16 p.o. for 8 days, decreasing for 8 days		Rapid subsidence of fever and nodes in 48 hrs. with Rx
15 1960	15 M	+	+	–	–	+	1/448	ACTH Methylprednisolone	80 i.m. stat., 16 p.o. for 5 days, wait 4 days, course repeated	Tetracycline	Relapse after cessation of Rx with rapid response again to 2nd course of corticoids

terial invasion. In no instance could it be seen that antibiotic therapy had any effect on the disease process in our series. Actually, the concept of secondary bacterial invasion in infectious mononucleosis may be a myth and the need of antibiotic therapy in this disease remains to be proven.

It is interesting to speculate why the corticosteriods produce such a rapid salutary response in infectious mononucleosis. Does the cortisone have a general anti-inflammatory effect or does it actually block some antibody (autohemolysin in the case of infectious mononucleosis complicated by hemolytic anemia) released from altered or damaged cells by the onslaught of the infectious mononucleosis agent? Could not altered autologous cellular protein released from damaged cells produce an auto-immunizing reaction in vivo resulting in the various manifestations of infectious mononucleosis? An auto-immunizing reaction has been posed as an etiologic factor in such diseases as rheumatic fever, rheumatoid arthritis, lupus erythematosis, etc., where the corticosteroids have been used effectively as a therapeutic agent.[13] The beneficial effects of corticosteroids in infectious mononucleosis could then derive from the block of a continuing allergic reaction.

Is there justification in using corticosteroids as a palliative agent in the treatment of this self-limited benign disease? Certainly, our experience and that derived from a perusal of the literature would indicate that this form of therapy can suppress systemic intoxication, reduce distressing symptomatology, and possibly shorten convalescence. No side effects have been reported with short term adrenosteroid therapy in infectious mononucleosis. In our opinion corticosteroid treatment can be employed as an effective weapon in the selected case of infectious mononucleosis and should be considered in all cases seriously ill with pharyngitis, high fever, prostrating asthenia, and disturbing complications; such as hemolytic anemia, thrombocytopenic purpura, neurologic, hepatic, and cardiac manifestations.

4635 Wyandotte St.
Kansas City 12, Missouri

A recent article has been reported employing chloroquin phosphate in the treatment of four cases of infectious mononucleosis with gratifying results.

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Medical Assistants Elect

Miss Mary Ellen Babb, Wichita, Kansas, was elected recording secretary of the American Association of Medical Assistants at the annual convention held in Dallas, Texas, recently. Miss Babb has served as president of the Sedgwick County Medical Assistants group and as president of the Kansas Medical Assistants Society.

More than 400 women employed as nurses, medical secretaries and medical assistants in physicians' offices have been attending a three-day educational program. Only four years old, the AAMA now has more than 9,000 members in 28 states around the country. It was organized to help women employed in physicians' offices become more efficient on the job.

Annular Pancreas

A Case Report With Duodenal Atresia and Hydramnios

EZATOLLAH FOROUGHI, M.D., *Kansas City*

A case of annular pancreas with duodenal atresia and hydramnios in a newborn is reported. Some of the relationships are discussed.

ANNULAR PANCREAS IS A RARE congenital malformation consisting of a ring of pancreatic tissue encircling the second portion of the duodenum. Tiedmann recorded the first case of annular pancreas in 1818 and Ecker gave the name of "ring or annular pancreas" to this congenital malformation in 1862.[1] McNaught, in 1933, following a review of the literature, reported the fortieth case of this anomaly.[1] Reported cases are increasing in recent years; Sanford, through a survey of the literature, concluded that 60 per cent of the operated cases with this anomaly have occurred since 1950.[2] Giaminattei, in 1955, gathered 10 cases of

From the Department of Pathology, St. Luke's Hospital in Kansas City, Missouri.

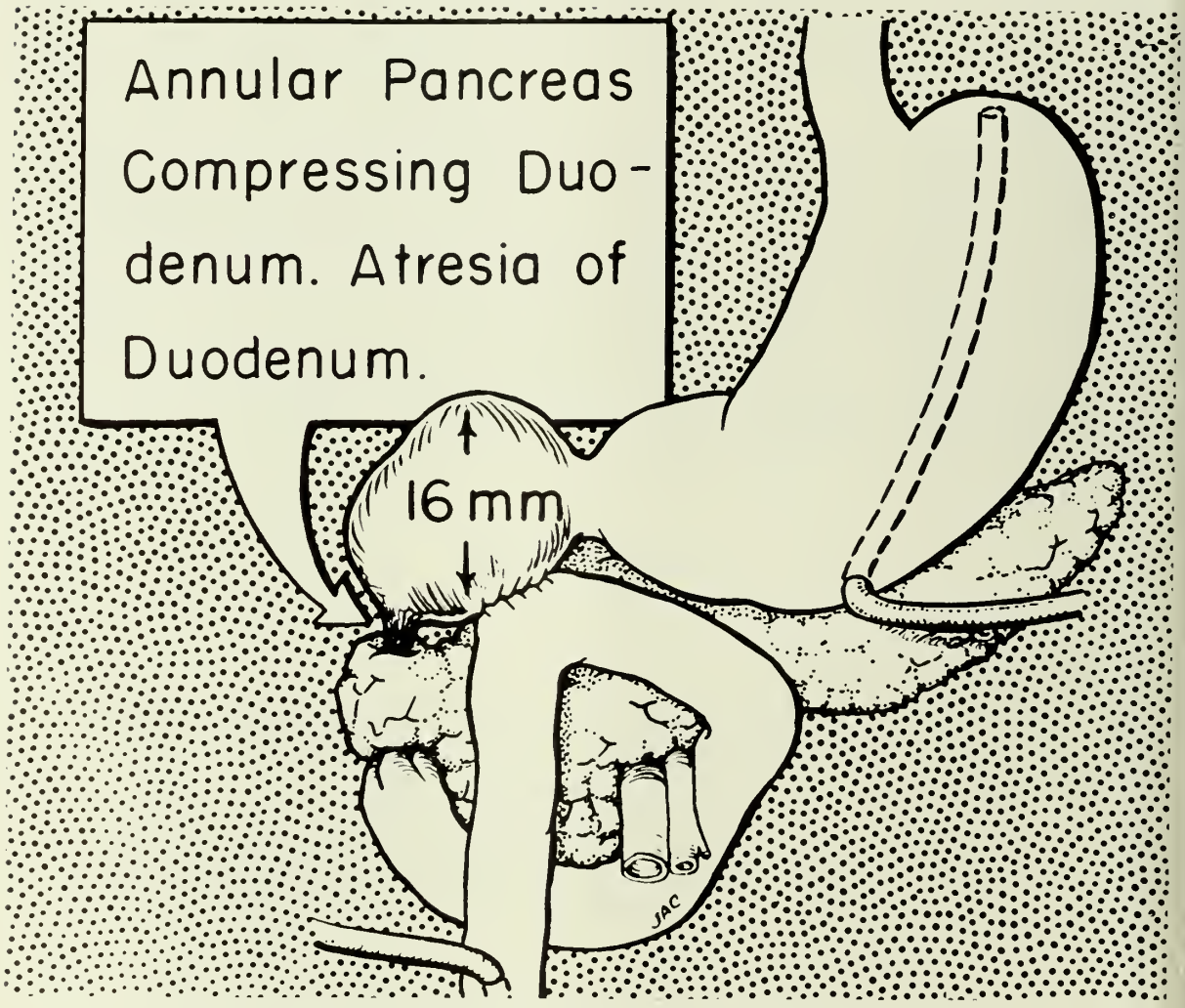

Figure 1. Diagram of the annular pancreas with concurring duodenal atresia.

annular pancreas causing intestinal obstruction in the first 10 days of life, to which Faringer added one in 1956 and Weatherill added three cases in 1958. Association of duodenal atresia with this anomaly is rare; six such cases have appeared in the literature, of which two were cured by surgery. The first case was that of Vidal, a three-day-old infant treated by a posterior gastroenterostomy, and the second case was that of Shapiro.

Case Report

This report concerns the case of a premature female infant of 220 days gestation, weighing 1265 grams and measuring 42.5 cm. crown-heel, which was delivered by Cesarean section from a 15-year-old mother. The maternal history was characterized by hydramnios and development of toxemia one week prior to delivery. At birth the infant responded poorly and was placed in an oxygen incubator. By the third day, abdominal distention was evident. X-ray examination revealed a dilated stomach with absence of gas in the small and large intestine. She was taken to surgery, duodenal atresia was found, and duodeno-jejunostomy, gastrostomy, and jejunostomy were performed. The infant died on the sixth postoperative day with generalized peritonitis.

At autopsy, a band of pancreatic tissue was found encircling the proximal part of the second portion of the duodenum. The first portion of the duodenum was dilated and had a saccular shape. No patent communication between the first and second portions of the duodenum was noted. The normal lumen was replaced by a fibromuscular band of tissue five mm. in length extending to the region of the annular pancreas *(Figures 1 and 2)*. Sections from the area of annular pancreas showed complete obliteration of the duodenal lumen. The duodenum was replaced by a mass of interlacing smooth muscle bundles. This mass was located adjacent to the common bile duct which was surrounded by pancreatic tissue *(Figure 3)*.

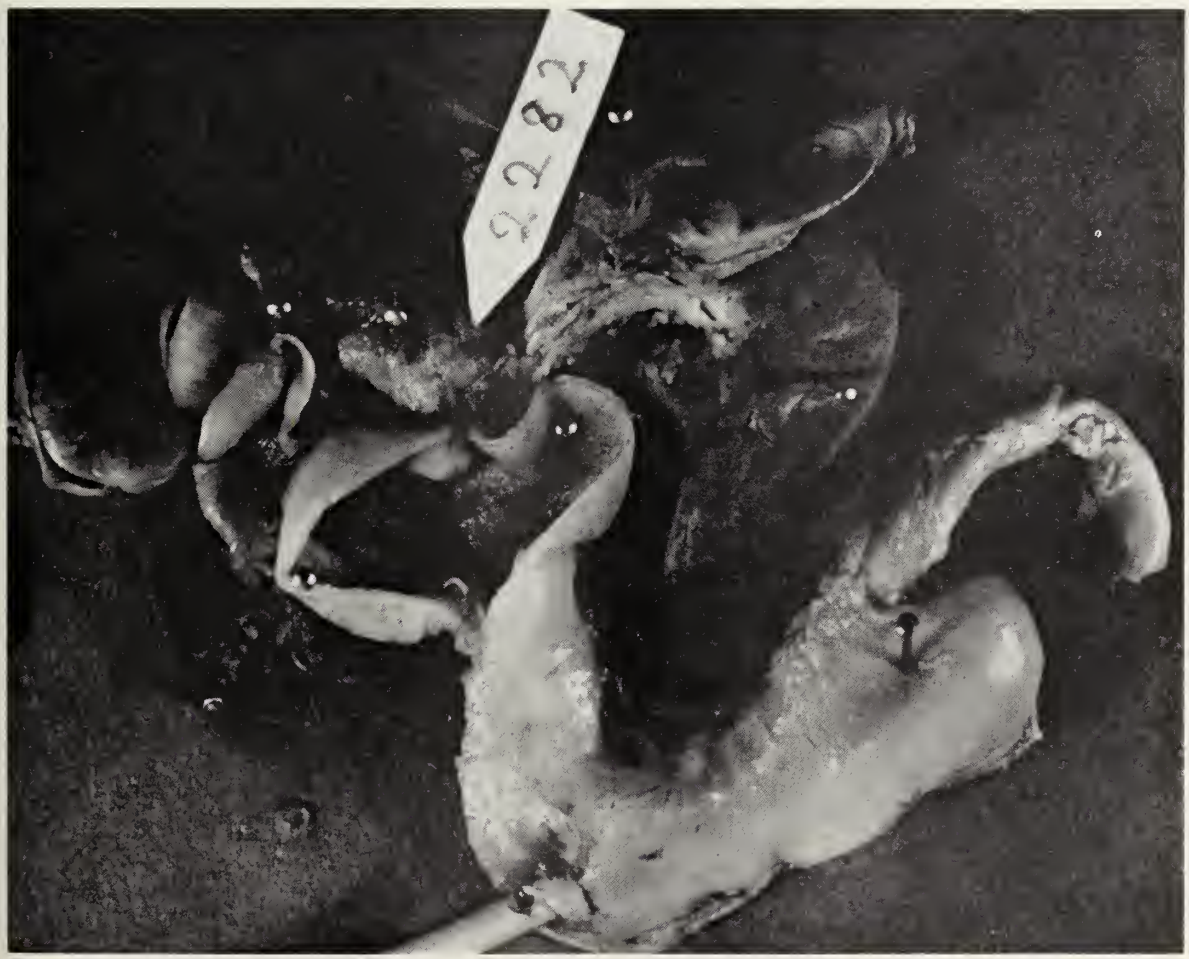

Figure 2. A ring of pancreatic tissue, identified by the pointer, is encircling the proximal part of the second portion of the duodenum. The blind spot, point of the proximal site of atresia, is protruding inside the opened, dilated first portion of the duodenum. The site of atresia is 5 mm. proximal to the pancreatic ring.

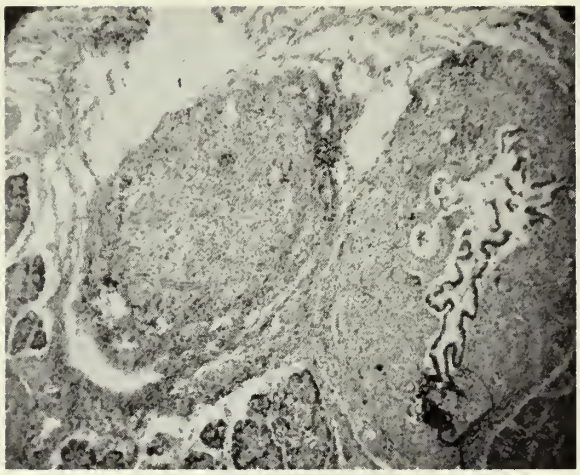

Figure 3. A fibromuscular nodule as a remnant of atretic duodenum adjacent to the section of common bile duct, both being surrounded by pancreatic tissue.

Comment

The case reported here, illustrates the usual manifestation of annular pancreas with duodenal atresia. Although annular pancreas is a congenital maldevelopment, it has been more frequently reported in periods other than infancy. During the fifth week of embryonic life, the pancreas is formed from two priomordial anlages, dorsal and ventral. The annular pancreas is attributed to the maldevelopment of the latter bud. Approximately at the same time, the duodenum evolves from its previous solid state forming lumen. The relatively rare coexistence of annular pancreas with duodenal atresia might indicate their independent pathogenic nature, even though the rotation of the ventral pancreatic anlage occurs at approximately the same time as the development of a lumen in the previously solid duodenum. Since the greater portion of the duodenal atresia, in our case, was located proximal to the annular pancreas, this assumption of independent etiology may be valid. Clinicial manifestations of annular pancreas are those related to a high intestinal obstruction which, if it occurs in a newborn and is asssociated with duodenal atresia, makes a preoperative diagnosis possible. Berlin described a constant and smooth appearing defect on the dextral descending duodenal border, concomitant with an atrophic mucosal pattern, as radiologic criteria.[8] The association of hydramnios with annular pancreas and duodenal atresia is rather interesting and the case reported here is the first case report of such a combination. Hydramnios has also been noted frequently in cases of esophageal atresia; of 13 infants with this anomaly, Scott and Wilson found 12 to have hydramnios.[9] Indeed, they regard hydramnios as an indication for passing an esophageal catheter immediately after birth in order to make an early diagnosis of esophageal atresia. Association of hydramnios with duodenal atresia also indicates the relation of the patency of the embryo's upper intestinal tract to the amount of amniotic fluid; therefore, hydramnios has a high diagnostic value in such cases. Furthermore, it has been demonstrated that injection of a radioopaque material into the amniotic fluid produces a subsequent concentration of the material in the embryo's gastrointestinal tract. This ingestion is apparent as early as the 12th week of fetal life.

710 Pacific Avenue
Kansas City, Kansas

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CHANGES OF ADDRESS

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Triamcinolone Acetonide

A Corticosteroid for Intra-Articular Injections in Orthopedic Practice

HARRY O. ANDERSON, ***Wichita***

ALTHOUGH THE JOINT PATHOLOGY of degenerative and rheumatoid arthritis differ, both disease processes respond well to intra-articular injections of the corticosteroids.[1-4] The action of the medication when it is instilled into the joint is palliative rather than curative in its anti-rheumatic, anti-inflammatory and anti-allergic action. Nevertheless, it causes changes in the joint and local regression of the disease.

The joint affected with degenerative or osteoarthritis is characterized by a primary degeneration of the cartilage which manifests itself first by a slight roughening of the surfaces and then by lipping and spur formation. As the irregularity progresses, the cartilage is worn away and the exposed bone becomes dense and hard. As these changes develop, other anatomical structures, the fibrous tissue, tendons, ligaments may be involved in a process of ossification. Changes in the synovial membrane in this form of arthritis are considered by some investigators to be a secondary development in the diseased joint. The changes may be caused by trauma from bony deformities or from an assortment of stimuli from the degenerating bone and cartilage.[5] In the later stages of the disease, when the process is fairly extensive, the synovial membrane, particularly of the larger joints, shows thickening and hypertrophy of the villous processes. Finally small, cartilaginous tumors form in the hypertrophied villi and they may remain attached or break off to float free in the joint.

Rheumatoid Arthritis

In rheumatoid arthritis on the contrary, the synovial membrane of the joint is involved initially in the disease process. The disease begins by a swelling of the joints caused by inflammation of the synovial membrane, the capsule and the surrounding soft tissue. The synovial membrane becomes red, swollen and the villous processes become hypertrophied. Eventually, the articular surface of the joint is covered by granulation tissue which becomes progressively denser forming a fibrous tissue which may, in time, cause an ankylosis of the joint. In other patients the cartilage ulcerates, giving rise to effusion, subluxation, and deformities. Histologic changes which spread as the disease progresses have been described as a non-specific, biochemical reaction of the connective tissue caused probably by a number of stimuli. These histologic changes consist of round cell accumulations in the involved anatomical structures, most notably the synovial membrane, nerve trunks, skeletal muscles and skin, and necrosis in the collagenous connective tissue, as typically seen in the subcutaneous nodule, where its association with the

Thirty-four patients with inflammatory involvements of the joints, degenerative, rheumatoid or traumatic arthritis, chronic, traumatic or post-operative synovitis, and a variety of other conditions—were treated by intra-articular injections of triamcinolone acetonide.

Excellent responses were manifested by seven (20 per cent) of the subjects; good responses by 16 (47 per cent); fair responses by four individuals (11 per cent) and poor responses by seven subjects (20 per cent).

Patients with diagnosis of degenerative, rheumatoid arthritis, synovitis, chondromalacia, fracture of the tibial condyles with effusion and osteochondritis seemed to achieve the best responses to the treatment. In this study, two patients with traumatic arthritis and one patient with a ganglion of the wrist exhibited poor responses to the therapy. There were no toxic or unwanted effects from the therapy. The medication can be instilled intra-articularly without the constitutional effects seen when this potent medication is given systemically. Careful procedure in intra-articular administration and the use of sterile technique lessen the risk of infection and hemorrhage.

Triamcinolone acetonide is a useful and therapeutically rewarding drug for the suppression of joint symptomology in arthritic and a variety of other joint involvements.

typical pallisade layer of primitive fibroblasts gives a picture that is regarded as diagnostic.[6]

The clinical manifestations of the joints of patients with these diseases may present certain similarities such as pain, inflammation, stiffness, tenderness, limitation of motion or an effusion of synovial fluid. Joint symptomatology in these and other conditions can be palliated and, in some cases, controlled by the intra-articular instillation of adrenal corticosteroids. A local effect is achieved in this way and unwanted systemic effects are avoided. The benefits gained from the intra-articular injection of the corticosteroids and their duration may vary from person to person and also from joint to joint. Dosage must generally be increased with the size of the joint involved and injections can be repeated to afford the patient relief from pain and disability.

Since the time when Hollander first employed cortisone and hydrocortisone in this manner for local control of joint symptoms, other corticosteroids, esters, and analogues of hydrocortisone and prednisolone, have been successfully used for this purpose. One of these is an aqueous suspension of triamcinolone acetonide* which has been used in comparatively small doses to achieve an excellent remission of joint symptoms[7, 8] in rheumatoid disorders and other inflammatory involvements of the joints.

In this study a group of 34 patients with arthritic or inflammatory involvements of one joint, or more, principally the knee, was treated by intra-articular instillation of triamcinolone acetonide.

Procedure

A group of 34 patients, seen in private practice, was suffering from various inflammatory or arthritic conditions involving the joints. In this group of patients, the knee was the principal joint involved and treated. The majority of patients had either arthritis (degenerative, rheumatoid traumatic, or post-operative) or synovitis (chronic, traumatic or post-operative), but a few patients had a variety of other joint conditions. (See the Table for exact diagnosis and their distribution.) Twenty of the subjects treated were males and 14 were females. More than 50 per cent of the subjects were over 50 years of age and the rest ranged in age from 28 to 50 years except for one child of 11 years.

Triamcinolone acetonide aqueous suspension was injected intra-articularly into the joint or joints involved by sterile techniques to prevent the introduction of infection. Dosage varied from two milligrams (0.2 cc.), administered into a finger joint, to 20 milligrams (2 cc.) injected into knee or hip joints. Some patients required only a single instillation of the medication; others had as many as ten injections given over an extended period of time. One individual received a total of 32 injections divided between both knees and one hip joint, during three courses of therapy, over a four-month period of time. The length of time elapsing between injections depended on the patient's response and the duration of effect but it varied generally from one week to one month.

Test Rated

Responses to the injections of triamcinolone acetonide were rated on the basis of the decrease of symptoms as determined by objective examination and by questioning the patient for subjective reactions to the treatment. Complete and rapid disappearance of joint symptom constituted an *excellent* response. Considerable amelioration of symptoms was graded as a *good* response. Slow, limited or temporary improvement of symptoms was rated as a *fair* response and anything less was graded as a *poor* response.

Many of the patients in this study had been treated previously with a variety of medications and treatments. Six had received intra-articular instillations of hydrocortisone, five had received oral doses of hydrocortisone and one had been prescribed methylprednisolone acetate. Physical therapy, x-ray therapy, and aspiration of the joint were among the treatments some subjects had been given. One had undergone a synovectomy. Only a few of the subjects received concomitant therapy, two had joints aspirated, one heat therapy and two patients were given treatments with ultra sound.

Results of Treatment

Out of a group of 34 patients with a variety of inflammatory conditions of the joints treated with intra-articular injections of triamcinolone acetonide, seven (20 per cent) manifested excellent responses, 16 (47 per cent) exhibited good responses, four (11 per cent) achieved fair responses and seven (20 per cent) had poor responses. (See the Table for more details.)

An examination of the responses of patients with various diagnosis reveals that instillations of Kenalog benefited a wide variety of different conditions. Out of 12 patients with degenerative arthritis, one exhibited an excellent response, seven manifested good responses, two fair responses, and two had poor responses. Of four patients with rheumatoid arthritis, one achieved an excellent response and three exhibited good responses. There were 12 patients with chronic, traumatic, or postoperative synovitis, who received intra-articular injections of triamcinolone acetonide, and, of them, five manifested excellent responses, three good responses, two fair responses,

* Triamcinolone acetonide (Kenalog®) was generously supplied for this study by the Squibb Institute for Medical Research, New Brunswick, New Jersey.

and two poor responses. One of these obtained relief for the first time in two and one half years since onset of the disease. There was one subject each with a diagnosis of chondromalacia of the patella, fracture of the tibial condyles with effusion and osetochondritis; each of them exhibited a fair response to the therapy under study. The least benefit was seen in two patients with traumatic arthritis and one patient with a ganglion of the wrist; neither of them obtained much relief from symptoms and were graded as poor responses.

Out of five subjects who had received previously intra-articular injections of hydrocortisone one patient with chronic synovitis obtained about equivalent relief from hydrocortisone and triamcinolone acetonide injections, two patients with rheumatoid arthritis and the patient with chondromalacia manifested superior results with triamcinolone acetonide.

There were no unwanted effects in the course of the study, no instances of intra-articular hemorrhage or infection. One patient with degenerative arthritis who received intra-articular injections into her knee observed a marked improvement in her back pain and discomfort.

Comment

Although almost a decade has elapsed since Hollander first administered a steroid by intra-articular injection, replacing the iodized oil, procaine and petrolatum injections in use during previous years,[9] the practicing orthopedist still finds the results of this treatment gratifying. When 23 out of 34 patients (67 per cent) exhibit excellent or good responses, as they did in this study, obtaining relief from the disabling symptoms of pain, inflammation, and swelling, the therapeutic value of the treatment is established. The value lies in the palliation of symptoms which is especially important in chronic conditions like the arthritic diseases or diseases of old age where the remainder of the patient's life can be made more comfortable and useful as a result of the treatment.

Though there are wide differences in the morbid anatomy and the pathohistology in some of the diseases treated (rheumatoid and degenerative arthritis for example), the corticosteroids are effective. This wide spectrum of therapeutic effectiveness is observable also in the corticosteroids given systemically. However, in systemic use, the unwanted effects present more of a deterrent to their use than they do in intra-articular instillations. Out of 34 patients treated in this study, no toxic reactions were observed, no unwanted effects of any kind were noted. In the use of hydrocortisone intra-articularly, a pain reaction is often observed for the first day or so following administration. This reaction was not observed in this study with triamcinolone acetonide.

Infection and hemorrhage can occur as a result of this treatment and it is important to preclude their

(Continued on page 577)

TABLE—RESPONSES OF PATIENTS WITH ORTHOPEDIC CONDITIONS TO INTRA-ARTICULAR INJECTIONS OF TRIAMCINOLONE ACETONIDE (KENALOG)

Diagnosis	*Number of Patients*	*Number of Injections*	*Response to Therapy* EXCELLENT	GOOD	FAIR	POOR	*Unwanted Reaction*
Degenerative Arthritis	12	1-8	1	7	2	2	0
Rheumatoid Arthritis	4	1-6	1	3	0	0	0
Traumatic Arthritis	2	1	0	0	0	2	0
Synovitis Chronic	5	1-10	2	1	1	1	0
Synovitis Traumatic	2	1	0	1	0	1	0
Synovitis Postoperative	5	1-2	3	1	1	0	0
Chondromalacia Patella	1	2	0	1	0	0	0
Fracture tibial condyles with effusion	1	4	0	1	0	0	0
Osteochondritis	1	2	0	1	0	0	0
Ganglion of wrist	1	1	0	0	0	1	0
Total	34		7 (20%)	16 (47%)	4 (11%)	7 (20%)	0

Unsteady Gait, Loss of Hearing and Progressive Weakness

Case Presentation

THIS WAS THE FIRST ADMISSION FOR this 67-year-old white woman. She was unable to give a history, so it was obtained from her husband who said that, except for the removal of bilateral cataracts, she had been in good health until about 15 years before admission. At that time she noted the gradual onset of an unsteady gait, but she was able to continue to work as a clerk-stenographer until six years before admission. She had been completely deaf in her left ear for many years, and she had had some loss of hearing in her right ear. She had worn a hearing aid since 1924, and her deafness had always been attributed to her work in a foundry. Four years before admission she became confined to a wheelchair because of the progressive weakness and unsteadiness of her legs. She was hospitalized elsewhere, and at that time a ventriculogram showed hydrocephalus. A suboccipital craniectomy and posterior fossa exploration were carried out. No tumor was found, however, and a diagnosis of Arnold-Chiari malformation was made. Since that time she had been bedridden, spastic and completely deaf in her left ear. She had stopped reading about two years before admission. She had had occasional episodes of vomiting for about one year before admission. Her speech had been unintelligible to everyone except her husband for about one year, but during the month preceding admission it had even become unintelligible to him. She had discontinued all of her spontaneous activity, including the watching of television, about six months before admission. She had become severely cachectic because of her inability to swallow and because of intermittent vomiting.

Her past history and family history did not otherwise contribute any essential data.

The patient was an emaciated, gray-haired, white woman who was bedfast and who could neither see, hear, write nor speak intelligibly. Her blood pressure was 130/80; her pulse was 60 and regular. There were recent and old healed decubitus ulcers over the sacrum. There were bilateral irredectomies. The oral mucosa was dry and caked; the tongue was dry and smooth. Diffuse rales were heard in the right lateral lung base. All peripheral pulses were palpable. There was wasting of the somatic muscles. Peristaltic waves were visible in loops of bowel through the abdominal wall. Abdominal reflexes were absent bilaterally. The craniectomy site was soft and pulsating. The patient's mental status could not be evaluated because of her inability to communicate. She could lift both arms off the bed, but she used her left arm with more power and facility than her right arm. She could lift both knees off of the bed, but she could not roll over. A Babinski sign was present on the right, and deep tendon reflexes were generally hyperactive, but more so on the right. Her vision could not be tested. There was coarse nystagmus to both right and left lateral gaze. The pupils were irregular because of the irridectomies, and only the right optic disc could be seen. There was no papilledema, but there was optic atrophy. Extraocular muscle movements were normal; the left corneal reflex was possibly decreased. Facial symmetry and motion were normal bilaterally. She could apparently hear commands only when they were shouted into her right ear. Her speech was severely dysarthric. The gag reflex was intact; the uvula was elevated in the midline; and tongue movements were normal. Her general sensory and cerebellar function could not be evaluated.

Edited by Jesse D. Rising, M.D. and Mahlon Delp, M.D. from recordings of the proceedings of the conference participated in by the departments of medicine, pediatrics, surgery, radiology and pathology of the University of Kansas Medical Center as well as by the third and fourth year classes of students.

There was a trace of albumin and mucus in the urine with 15 to 20 pus casts per high power field, occasional red blood cells, few bacteria and rare finely granular casts. The hemoglobin was 10.3 gm. per cent; hematocrit, 38.5 per cent; mean corpuscular hemoglobin concentration, 27.5. A white count was 24,000 with 82 per cent polymorphonuclears (two per cent non-filamented), 16 per cent lymphocytes, and two per cent monocytes. The VDRL was negative. The blood urea nitrogen was 21 mg. per cent; blood sugar, 104 mg. per cent; serum albumin, 2.70 gm. per cent; serum globulin, 2.66 gm. per cent; total protein, 5.36 gm. per cent; bicarbonate, 24.4 mEq/L; sodium, 131 mEq; potassium, 3.3 mEq; chloride, 104 mEq. A urine culture revealed a heavy growth of B. proteus and E. coli.

The patient was moribund and severely cachectic on admission. She was placed on an alternating pressure air mattress and turned frequently. Dilute feedings of multivitamins and an anabolic hormone oral preparation were given with a nasogastric tube. She was afebrile on admission, but thereafter her temperature remained between 100 and 101.4 degrees. On her fifth hospital day her respiration became rapid with rales and rhonchi in both lung fields and a prolonged expiratory phase of respiration. The pulse rate remained at about 100 per minute. There was minimal cyanosis of the nail beds. Tube feedings were continued throughout her hospitalization. She was started on oral antibiotics. Tracheal suction was carried out with only minimal improvement, and she died in respiratory distress on her sixth hospital day.

Dr. Mahlon Delp (moderator): Are there any questions?

Jean Legler (fourth year medical student):* Was a spinal fluid examination done?

Dr. Keith Whitaker (resident in neurosurgery): No, it was not.

Scott Jordan (student): What were the serum calcium, phosphorus and alkaline phosphatase values?

Dr. Whitaker: They were not done.

Sunil Das (student): Did she have cafe-au-lait spots or any skin nodules?

Dr. Delp: None were noticed.

Rodger Lambie (student): Were muscle fasciculations ever noted?

Dr. Delp: No.

Ronald Hancock (student): Did she have any vomiting on her last day?

Dr. Whitaker: She had some regurgitation during the last 48 to 72 hours of her life.

Mr. Legler: Did her unsteady gait tend to make her fall to one side?

Dr. Whitaker: No information was available about that.

Dr. A. T. Steegmann (neurologist): Were there any skin changes or roughness that resembled icthyosis?

Dr. Delp: Her skin was soft and pliable.

Dr. Steegmann: Was there a history of intermarriage in her family?

Dr. Delp: Not to my knowledge.

Charles Monson (student): Did she complain of neck pain or headache?

Dr. Delp: The history was obtained from the patient's family, and there was no mention of headaches.

Mr. Lambie: Did she have any recent burns or scars of old burns?

Dr. Whitaker: No, she did not.

Mr. Hancock: Was there any asymmetery in the facial motion at any time?

Dr. Whitaker: No.

Mr. Jordan: Was her difficulty in walking due to balance or weakness?

Dr. Whitaker: We do not have that information.

Mr. Lambie: Was there any history of diplopia?

Dr. Whitaker: No.

Mr. Das: Was her intellectual impairment associated with the development of her unsteady gait?

Dr. Delp: So far as could be ascertained her mental capacities were not impaired, but she was unable to communicate because of the bulbar signs.

Mr. Legler: Why was the left fundus not visualized?

Dr. Whitaker: The patient was uncooperative.

Mr. Jordan: Was there anything unusual about the size and shape of her skull or neck?

Dr. Whitaker: No, except for the suboccipital craniectomy.

Mr. Das: Was the jaw jerk ever elicited?

Dr. Delp: It was not recorded.

Robert Koop (student): What was her temperature course?

Dr. Delp: She was afebrile on admission, but thereafter she had a fever up to 101 degrees.

Mr. Koop: When did the fever develop?

Dr. Delp: The fever developed approximately 12 hours after it was first recorded as normal, but I am uncertain as to when that first reading was taken. I suspect that she had fever on the day of admission.

Mr. Jordan: Was there anything unusual about her teeth or mouth?

Dr. Delp: No.

Mr. Legler: What was her dietary history?

Dr. Delp: Her intake obviously had been bad. Now, if there are no more questions we will have the x-ray.

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* Although a student at the time of this conference in March, 1959, he, like the others referred to as students, received the M.D. degree in June, 1959.

X-ray

Mr. Lambie: The only x-ray of this patient is a chest film taken on September 15, 1958 *(Figure 1)*. It has been stated that she was bedridden during her entire hospitalization, so I assume that this is a portable chest film. The skeletal pattern appears normal with the exception of minimal osteoporotic changes. The cardiac silhouette is somewhat enlarged, but, assuming that this is a portable film, I do not believe that it is significant. The aorta is outlined suggesting some atherosclerotic changes. The apex on the right appears clear. There is diffuse haziness in the middle and lower lobes of the right lung, and the diaphragms are hazy. I attribute this either to the fact that the patient had taken a breath during the filming or because this is a portable film. There is also costal blunting and diffuse process in the left apex. The remainder of the left lung appears clear. I interpret this film as being consistent with a pneumonic process involving the middle and lower lobes of the right lung.

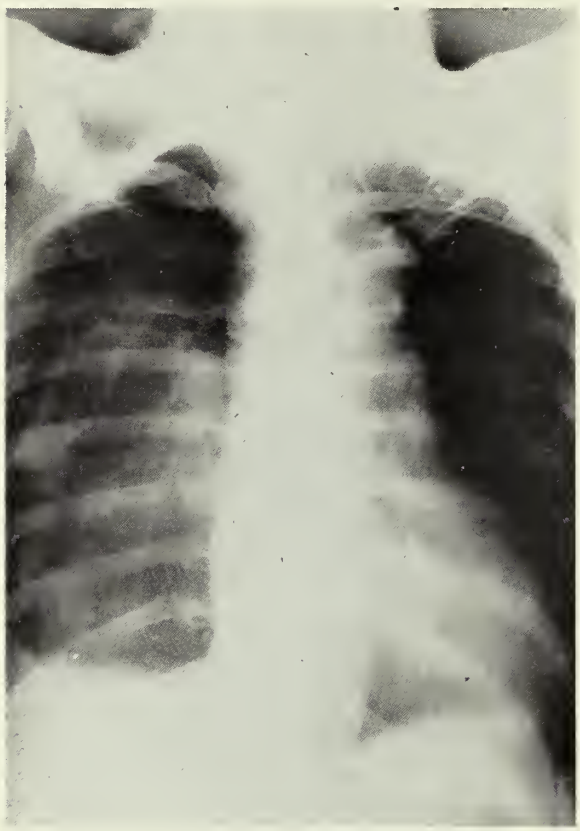

Figure 1. Chest film, September 15, 1958.

Dr. Delp: Mr. Legler, will you please define the Arnold-Chiari syndrome?

Mr. Legler: The Arnold-Chiari malformation is the herniation of the cerebellar tonsils into the cervical spinal canal.

Dr. Delp: Do you agree with that, Mr. Jordan?

Mr. Jordan: The malformation is congenital, and the syndrome is acquired.

Dr. Delp: Mr. Koop?

Mr. Koop: At one time the Arnold-Chiari syndrome was described as being associated with meningomyelocele.

Dr. Delp: All right, may we have the differential diagnosis now, please?

Differential Diagnosis

Mr. Koop: The primary disease process in our case today includes loss of hearing and the gradual progression of cerebellar and brain stem signs and symptoms. Although there has been a diagnosis of the Arnold-Chiari malformation, I do not believe that was the primary disease. Platybasia often produces the clinical picture of the Arnold-Chiari syndrome, and, while hyperparathyroidism must be considered here, it can be ruled out because there were no typical symptoms, and urinary electrolytes and the x-ray were not consistent with that diagnosis. Padgett's disease of the bones can be ruled out because there were no changes in the size of the patient's head or any history of a previous fracture, and the x-ray is not compatible with that diagnosis. The Klippel-Feil syndrome will cause platybasia and give the Arnold-Chiari malformation, but I shall discard it because of the lack of typical findings of hunched shoulder and low hairline.

Syphillis can be dismissed because of the negative VDRL. Chronic arachnoiditis is an enticing diagnosis and must be considered because the symptoms often include loss of hearing. I shall discard it, however, because complete deafness and pressure symptoms are not usually associated with that disease.

Vascular diseases often have an acute onset, but there are no signs of pressure with hydrocephalus in cases of long duration. I shall dismiss that as a possible diagnosis because of the patient's progressive signs and symptoms.

A degenerative disease such as amyotrophic lateral sclerosis must be considered seriously; it can be discarded, however, because of the lack of muscular fasciculations and because there is usually termination in two to five years. I shall rule out syringomyelia because our patient had no unilateral tongue atrophy, paralyzed palate or scars of old burns. There was no history of characteristic dissociated sensory loss. Intention tremors are commonly seen in intercurrent cerebellar degeneration, but usually there is no nystagmus, and, again, there were no pressure symptoms to go with the Arnold-Chiari syndrome.

The only important demyelinating disease to be

considered here is multiple sclerosis. Loss of hearing, however, is rarely a symptom of that disease, and because loss of hearing was a presenting complaint of our patient I shall dismiss it as a primary diagnosis. Patients with multiple sclerosis are usually euphoric almost until death, but our patient did not display any euphoria.

Fifty per cent of all intracranial tumors are gliomas, but because of the long duration of our patient's course these can be ruled out. Tumors in the cerebellum often have a more active course, but rarely have an onset after the age of 30. Colloid cyst of the third ventricle can be dismissed as a possible diagnosis because of the gradual onset and progression of our patient's symptoms. Cholesteatoma is a rare tumor that grows slowly. When the hearing is involved the tumor is found in the cerebellopontine angle, and symptoms progress rapidly. I shall discard it, however, because of the slowness of progression of our patient's symptoms. Meningiomas comprise 10 to 14 per cent of all intracranial tumors, but only five per cent are found in the posterior fossa. Symptoms progress slowly, sometimes extending over a period of 20 to 30 years. If the meningioma is in the cerebellopontine angle the clinical picture could be similar to that of our patient's, and therefore I can not dismiss it completely. It rarely occurs, however, in the posterior fossa.

Ten to 15 per cent of all intracranial tumors are acoustic neuromas which usually occur in patients between the ages of 30 to 50 years with loss of hearing as the presenting symptom. Our patient had deafness for almost 30 years before any additional symptoms had appeared. An unsteadiness of gait develops when an acoustic neuroma involves the tubular portion of the nerve. Horizontal nystagmus is usually present. Loss of the corneal reflex is one of the most common symptoms of a fifth nerve involvement. In the latter stages of the disease there is pressure on the brain stem and cerebellum resulting in the Arnold-Chiari syndrome and the development of increased pressure in the posterior fossa. The pressure could result in loss of hearing in both ears instead of complete loss in the left ear. Because our patient developed cerebellar signs and symptoms and an unsteadiness of gait I believe that the lesion was located in the cerebellopontine angle. Her condition became progressively worse, and there were signs of kidney infection, pneumonia, and respiratory distress. She may have had Cheyne-Stokes or Biot's respiration, a periodic type of respiration with bulbar and pressure signs. Dysarthria and respiratory difficulty are associated with that lesion. I shall rule out a cerebellar process as the terminal event because on admission the site of the craniectomy was soft and pulsating, and that is a normal finding without increased intracranial pressure. My final diagnosis is an acoustic neuroma of the left side.

Clinical Discussion

Dr. Delp: Thank you, Mr. Koop. What is your diagnosis of the primary disease, Mr. Legler?

Mr. Legler: Acoustic neuroma.

Dr. Delp: Mr. Hancock?

Mr. Hancock: I believe the primary disease was an acoustic neuroma; the tumor, however, was not found at surgery.

Dr. Delp: Can you explain why that diagnosis was not made at the previous exploration, Mr. Jordan?

Mr. Jordan: These tumors are difficult to find because they are surrounded by arachnoid cysts. The surgeon may have found and drained the arachnoid cyst in the belief that the disease process would be delayed.

Dr. Delp: What is your explanation, Mr. Das?

Mr. Das: Cushing cites two cases in which no tumor was found at exploration but later were found at autopsy.

Dr. Delp: Mr. Koop, what is your explanation?

Mr. Koop: This type of operation was formerly approached with the patient in the prone position, and, consequently, during operation blood drained down into the field and obscured the vision. Now with patients in the sitting position during operation this problem is more or less eliminated.

Dr. Delp: Mr. Legler, what was the final cause of death?

Mr. Legler: Pneumonia with overwhelming infection.

Dr. Delp: Mr. Hancock?

Mr. Hancock: On the basis of the x-ray findings I believe death was caused by aspiration pneumonia.

Dr. Delp: Mr. Jordan?

Mr. Jordan: Acute pulmonary edema due to the increase in venous pressure.

Dr. Delp: Mr. Das?

Mr. Das: Because she had been bedridden for several months she could have had a pulmonary infarct.

Dr. Delp: Mr. Lambie?

Mr. Lambie: Pneumonia and a depressed respiratory center from a tumor.

Dr. Delp: Mr. Koop?

Mr. Koop: I believe pneumonia was the cause of death.

Dr. Delp: What was the etiology and the pathogenesis?

Mr. Koop: She had pneumonia before she was admitted, and rales were recorded on admission.

Dr. Delp: Dr. Williamson, I was impressed with the seriousness of this patient's illness and with your

statement that you would admit her although her general condition was such that she apparently could not tolerate even so much as a blood count. Will you give us your differential diagnosis, please?

Dr. William P. Williamson (neurosurgeon): This patient presented a difficult problem, and I shall try to explain why I admitted her. She had originally lived in Kansas City and had moved to Texas, but she had been brought back to Kansas City to stay with a niece until she died. She had had a neurosurgical exploration, and the diagnosis made at that time was pressure at the base of the brain with displaced brain. Her niece was desirous of a medical opinion as to whether anything could be done for her. An outpatient appointment was made for the patient, and she was brought to the clinic by ambulance and stretcher. When I saw her my first question was not how long has she been sick, but when did she die! Her niece could offer no information about her, and the husband was senile and could tell us nothing. Her deafness had apparently been attributed to the fact that she had worked in a foundry. She had a long-standing history of staggering gait. Her symptoms eventually developed to suggest a tumor, and a ventriculogram and an exploration were done. From their description it was apparent that her husband and niece had been told that she had an Arnold-Chiari malformation, and I concluded that that meant a herniated cerebellar tonsil. Her symptoms had become progressively worse; she had difficulty in swallowing, talking, and walking. It was my belief that the disease could be localized in the region of the brain stem because of the dysarthria, the choking, deafness, staggering, and the bilateral signs. I believed that because of its slow progression and because at one time it had been characterized by hydrocephalus and herniated tonsils the disease was probably more tumor than degenerative. I was aware that acoustic neuroma was the most likely diagnosis, and yet a neurosurgeon had missed it. I did not believe that she had any of the degenerative diseases such as multiple sclerosis or amyotrophic sclerosis. She had been brought to me to determine whether she had a brain tumor, and, if so, whether anything could be done for her. The possibility was weighed of doing any tests at all. Her family believed that they had never been given a diagnosis. They knew that she was going to die, and they believed that if she died during an attempt to get a diagnosis it was justified. There was no choice but to admit her as a diagnostic problem in this stage with a known presumptive diagnosis of a benign brain tumor of 15 years duration. My admission diagnosis was a benign brain tumor in the brain stem, probably a left acoustic neuroma that had simply been missed by the neurosurgeon on exploration. The herniated tonsils had simply been evidence of pressure. The decompression afforded by the previous exploration had allowed her to survive for a few additional years.

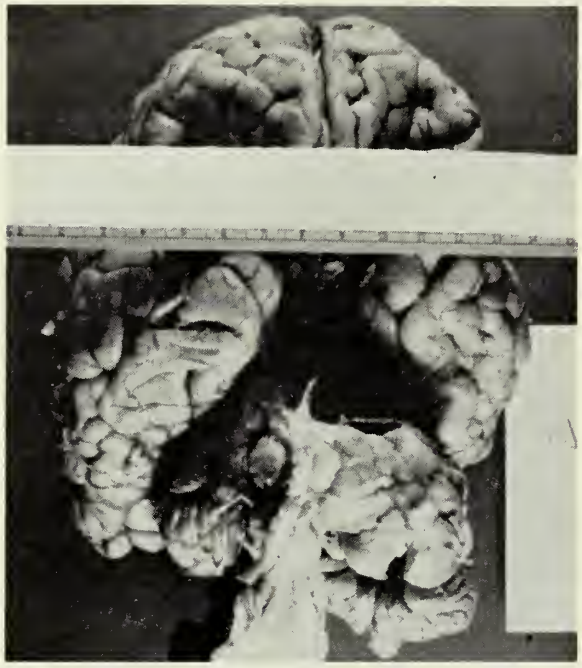

Figure 2. Ventral surface of brain which shows the tumor of left cerebellopontine angle to have an irregular torn surface made by freeing the adhesions at time of necropsy.

Dr. Delp: What do you believe was the immediate cause of the patient's death, Dr. McKee?

Dr. Wallace McKee (internist): I believe she had pneumonia and renal infection.

Dr. Delp: Dr. Allen?

Dr. Max Allen (internist): I agree with that. A patient with a nasogastric tube is extremely fortunate if he goes for any length of time without developing aspiration pneumonia.

Dr. Delp: Dr. Boley, may we hear from you now, please?

Pathological Report

Dr. James Boley (pathologist): The patient was quite emaciated, the body weighing 86 pounds. There was discoloration and atrophy of the skin of the sacral area indicating healed decubitus ulcers.

Of most interest was a protuberance of the occipital area overlying the operative defect in the skull. Many adhesions were found between the subcutaneous tissues, dura, cerebellum, part of the pons and part of a tumor. A part of the aggregate was herniated into the defect of the skull causing the protuber-

ance. A lobulated tumor located in the left cerebellopontine angle measured 6 x 4 x 3 cm., causing a shifting of structures toward the opposite side, atrophy and angulation of the brain stem *(Figure 2)*. The latter finding is similar to the Arnold-Chiari syndrome. The tumor was firm and white with yellow foci. Microscopically it was composed of compact, interlacing bundles of spindle cells *(Figure 3)*. In other areas it was more edematous with but little tendency to be arranged in bundles. The yellowish areas noted in the gross contained foam cells and represented degeneration.

Small cystic areas in the pons represented degeneration and were usually surrounded by a demyelinated zone.

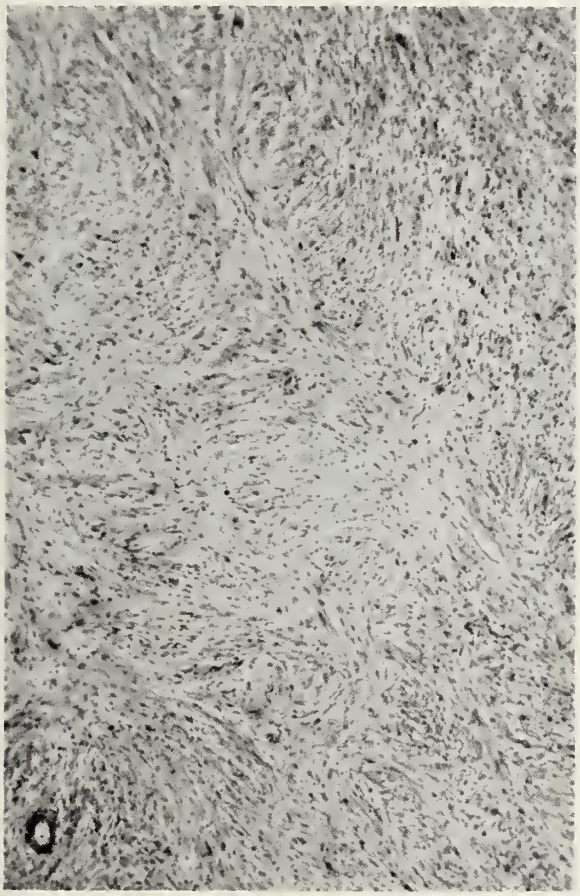

Figure 3. Acoustic neuroma composed of bundles of spindle cells. Hematoxylin-eosin stain. ×72.

Acoustic neuromas, which our patient had, have a slow growth, produce distortion, degeneration of adjacent brain substance and are malignant only by location.[1]

The immediate cause of death was found in the chest. The lower right pleural space contained 400 ml. of purulent material. Scattered firm areas of bronchial pneumonia were present in all lobes of the lungs, and purulent material was expressed by pressure. Microscopically the pneumonic areas, the bronchi and surrounding alveoli contained polymorphonuclear leukocytes. In some pneumonic areas there were multinucleated giant cells of the foreign body type, associated with vegetable fibers *(Figure 4)*.

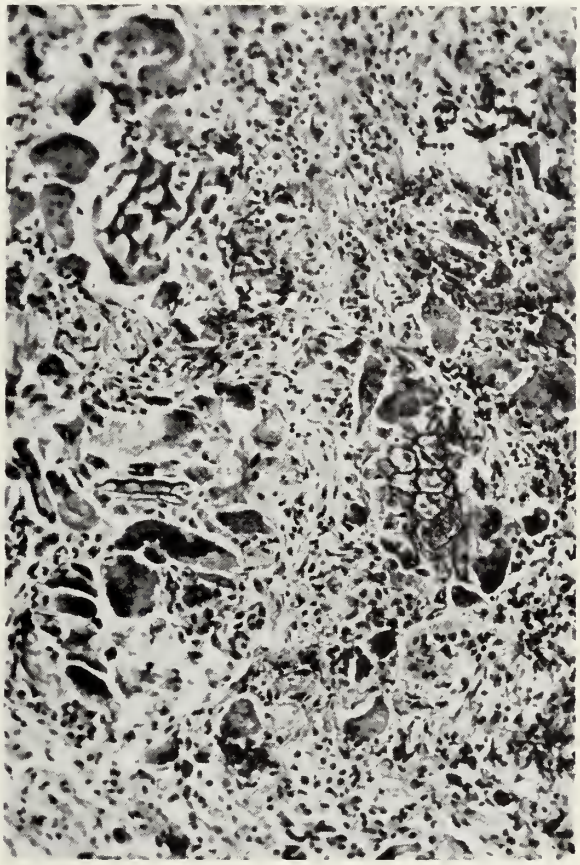

Figure 4. Aspiration bronchial pneumonia. Note the vegetable fibers and surrounding multinucleated giant cells. Hematoxylin and eosin. ×176.

The heart was slightly enlarged. A moderate degree of arteriosclerosis was present in the coronary arteries and a lesser amount in the aorta. The kidneys revealed minimal arterionephrosclerosis.

In summary, the primary cause of death was an acoustic neuroma with aspiration pnuemonia occurring terminally.

Dr. Delp: Thank you, Dr. Boley. How long do you believe this aspirant was in the lung?

Dr. Boley: Some idea can be gained from the empyema cavity *(Figure 5)* which has a thick layer of granulation tissue. The pneumonia must have preceded the empyema, so I would surmise from one to two weeks duration.

Dr. Delp: Dr. Williamson, have you any other

comments concerning the history of acoustic neuroma and its clinical course?

Dr. Williamson: This brain tumor usually has such a classical course that it can be diagnosed and localized and a histological diagnosis made on the history and the findings. Most operations for acoustic neuromas are done without a ventriculogram because the surgeon is so confident of his diagnosis. Apparently some misleading factors entered here such as the patient's bilateral deafness which was attributed to another disease, the removal of cataracts and other confusing issues. She was admitted so that we could temporize a few days in order to communicate with the neurosurgeon in Texas to determine his findings. She had had a spinal tap during a local epidemic of encephalitis, some cells had been found in the fluid, and the doctor believed that a possible diagnosis of encephalitis might have been the cause of her symptoms. A ventriculogram at that time showed only obstructive hydrocephalus which is compatible with an acoustic neuroma, but these studies only signified that there was a lesion in the posterior fossa. Since air does not go back and outline it the surgeon is left without any further localizing information. Acoustic neuromas may certainly be missed by a routine suboccipital exploration unless the surgeon visualizes the angle which is sometimes difficult to do if there is no preoperative diagnosis of acoustic neuroma. Because the surgeon did not state in his operative note that he had actually visualized the angle, I was confident that the patient had an acoustic neuroma, but I was uncertain of the diagnosis of Arnold-Chiari malformation, the most common cause of which is lumbar meningiomyelocele. Eighty per cent of children with meningiomyelocele have the Arnold-Chiari malformation, and it is rarely found in an adult who did not have a meningiomyelocele as a child. When an operation is done in the posterior fossa for a tumor and none is found a diagnosis of Arnold-Chiari malformation is usually given. The tonsils are herniated, and it is necessary to give the family a diagnosis. A negative exploration leads the surgeon to fall back upon this diagnosis which, in my opinion, simply means that the patient had a tumor, but that the tumor was not found. By the time our patient was seen here so much confusion existed that, although we were unable to tell neurologically, in all probability five years before her admission here her symptoms included a deaf ear, decreased corneal reflex, nystagmus toward the side of the lesion, ipsilateral cerebellar ataxia, and probably contralateral mild hemiparesis. Her right arm did not function as well as her left arm, and she had a right Babinski. There were such total signs of complete brain stem involvement that it was actually a guess as to the most likely diagnosis. In all fairness to the surgeon, however, I did not see the air study and do not know the details. An acoustic neuroma, however, should be diagnosed quickly, localized with certainty, and found by the operating surgeon, and should be cured with total removal.

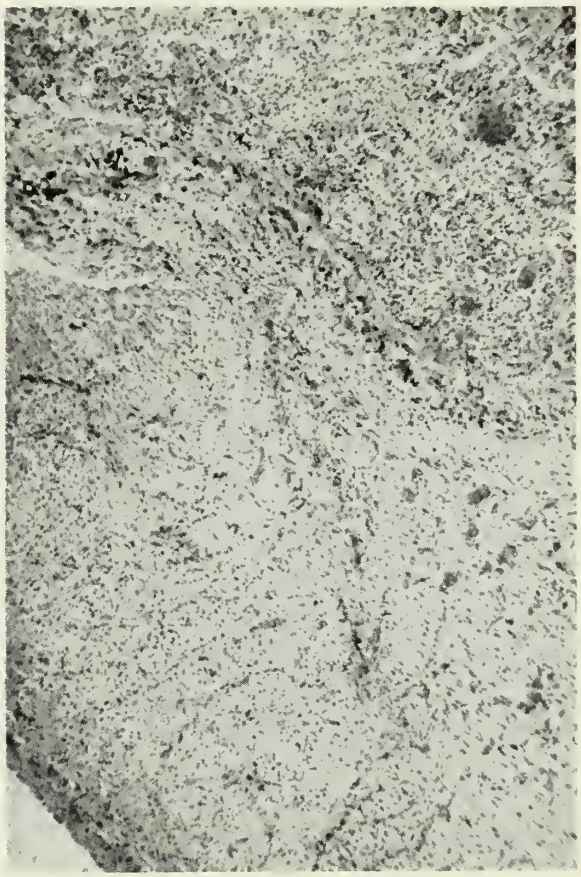

Figure 5. Organized pleural exudate. The empyema cavity is of the upper right corner. Atelectatic lung at the lower border of picture. Hematoxylin and eosin. ×72.

Pathological Anatomical Diagnosis

Acoustic neuroma, 6 x 4 cm., with compression and excavation of pons and left cerebellar hemisphere.

Surgical defect of posterior cranial vault.

Cystic cavitation in left pons.

Dilatation of fourth ventricle and lateral ventricles.

Acute mucopurulent aspiration tracheobronchitis.

Aspiration pneumonia, all lobes of lungs.

Encapsulated empyema of right pleural cavity posteriorly.

Reference

Zulch, K. J., Brain Tumors, Their Biology and Pathology, Springfield Publishing Co., p. 178.

Student
THESIS

Acute Appendicitis in Pregnancy

RICHARD M. SWENGEL, M.D., ***San Diego***

THE DIAGNOSIS OF APPENDICITIS is frequently difficult in the young, the old, the obese and the pregnant patient. When acute appendicitis occurs during pregnancy, the mother and fetus are exposed to dangers beyond the usual complications and sequelae of pregnancy.

The German surgeon Mikulicz, in 1884, was the first to suggest that acute appendicitis might be diagnosed preoperatively, and that the correct treatment was early removal of the appendix. It has long been thought that Kronlein was the first to remove successfully an acutely inflamed appendix during pregnancy after considering this diagnosis preoperatively. Kronlein did this operation in July, 1885, and acknowledged debt to Mikulicz and to Lawson Tait as the originators of his approach to the problem of management of acute appendicitis. However, it is now clear, from the article entitled "Surgical Treatment of Typhlitis" in the *Birmingham Medical Review,* not only that Lawson Tait was the first British surgeon to diagnose acute appendicitis and treat the condition during pregnancy by removal of the appendix, but also that he did the first of these operations in May, 1880.

Wiggins, in 1892, reported a case of perforated appendix with a three-month fetus in utero in which he advised removal of the appendix, only to have his counsel rejected by the patient's relatives. The patient died of peritonitis and the pregnancy was confirmed post-mortem. The diagnosis of acute gangrenous perforated appendicitis also was confirmed at necropsy. Wiggins took this patient unto his care in July, 1889.

Munde, in 1894, appears to have reported the first successful case in America to be treated by operation. The patient was near the eighth month of gestation and in active labor. She was delivered of a stillborn infant and had complete recovery following surgical drainage. Hirst, some two weeks later, reported a similar case. The patient was operated at about 4½ months gestation; she subsequently delivered uneventfully at full term. Hancock, in 1848, reported a case of perityphlitic abscess drained surgically in the puerperium. The patient was in about the eighth month of gestation and having premature labor, and she was delivered of a stillborn infant. However, it is doubtful from the history if it was in fact a case of acute appendicitis. It would seem more probable that he was dealing with a strangulated Richter's hernia.

The roentgenological studies of the appendix and cecum during pregnancy have produced interesting views in reference to the physical findings of acute appendicitis complicating pregnancy. Fueth, in 1905, and Baer and associates, in 1932, reported their observations on the displacement of the cecum and appendix in pregnant patients. Baer concluded: "During normal pregnancy there is a shifting in the base of the appendix from its normal low-lying position in the iliac fossa to one somewhat above the iliac crest near term. In addition, the long axis of the appendix

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This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be best by the faculty at the school. Dr. Swengel is now at the U. S. Naval Hospital, San Diego, California.

changes from the normal downward and inward direction, first to the vertical, often curving around the uterine fundus. This gradual outward and upward displacement of the appendix by the growing uterus places the appendix well above the crest level, and

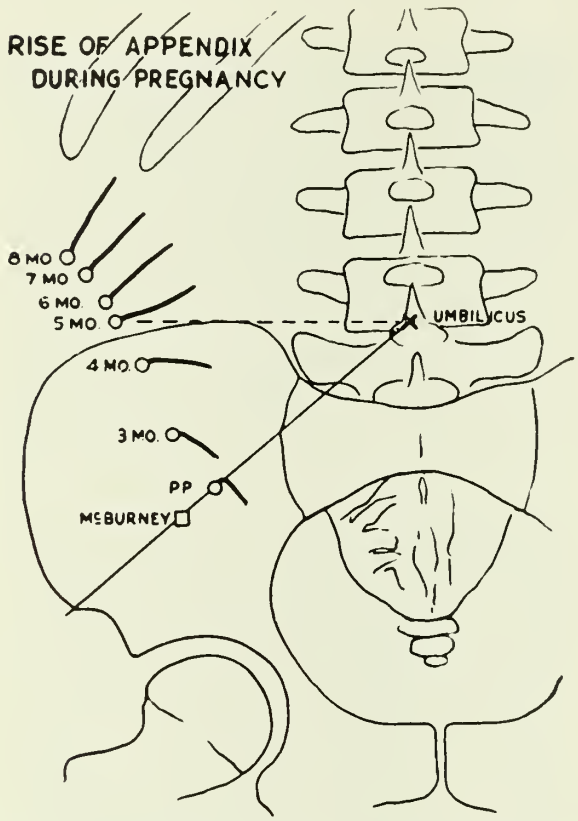

Figure 1. Changes in position and direction of appendix during pregnancy: After the fifth month of pregnancy the appendix lies at the crest level and rises above this level during the last trimester. The postpartum position of the appendix (pp.) corresponds to its position in the nonpregnant state. Roentgenologically, the base of the appendix is usually found medial to McBurney's point. The average position of the umbilicus corresponds to the point at which a line extended horizontally from the iliac crest crosses the spine.

therefore above McBurney's point. The colon is also pushed upward and curves around the uterine fundus, the cecum being crowded upward and outward, often being buckled on itself, because of the pressure exerted by the growing uterus." A return of the displaced viscera to their normal positions usually occurs within the first ten days postpartum. These findings may cause masking of the physical findings when the appendix is the site of inflammation after the fourth month of gestation.

The incidence of this complication of pregnancy is variously reported and statistically covers a wide range. Rosner found 22 cases in 15,000 pregnancies, whereas Van Gordt gave an incidence of three cases in 10,000 pregnancies. Sauramo reported 13 cases of acute appendicitis in 65,000 pregnancies. Prindle and Hesseltine reported 41 cases in 59,403 pregnancies, with an incidence of 0.069 per cent, while Hoffman and Suzuki reported 45 cases in 44,242 pregnancies, with an incidence of 0.101 per cent. Cosgrove reported 0.072 per cent in 2,500 pregnancies. The fetal loss in Cosgrove's series was 16.6 per cent in 18 cases and there was one maternal death. Meiling reported 21 cases of acute appendicitis in 49,681 deliveries with two maternal deaths; the fetal loss was 42.8 per cent. At the University of Kansas Medical Center there were 11 cases in 12,742 deliveries in the period from January 1, 1952, to June 30, 1959, with an incidence of 0.086 per cent. There was no infant or maternal mortality. In Mussey's series of 75 cases he found that 50 per cent of his patients gave a history of previous attacks of appendicitis. Baer and associates reported a similar incidence in their series of 28 cases of appendicitis complicating pregnancy. In the 11 cases of acute appendicitis comprising the K. U. study, three, or 27.3 per cent, gave a history of previous attacks. It would seem evident from the available statistics that pregnancy does not predispose to acute appendicitis.

Usually in First or Second Trimester

It is the general consensus of opinion in the literature that appendicitis is most frequently encountered during the first and second trimesters of pregnancy. In the K. U. series the distribution tends to confirm this concept *(Table II)*.

It has been thought that the beginning displacement of the appendix and cecum plays more than a coincidental part in those cases with previous attacks of similar abdominal pain. This fact was not substantiated by the K. U. study *(Table IV)*. Statistically, from this study, the displacement of the appendix after the third month of pregnancy was more significant than the history of previous attacks. In the K. U. study, 63.6 per cent of the cases occurred after the third month of gestation irrespective of history of previous attacks of abdominal pain.

The symptomatology of acute appendicitis is the same in the gravid as in the nongravid patient. Nausea, vomiting, guarding, rebound tenderness, fever and leukocytosis are usually present *(Tables III, V, & VI)*. The interpretation of these findings in the last six months of pregnancy may be difficult because of the displacement of the appendix and cecum. As pregnancy advances, the pain should tend to be higher

and more lateral. However, in the K. U. study the anatomical position of the appendix and presenting symptomatology did not coincide *(Tables II & III)*. One patient had only periumbilical pain while the remaining antepartum patients all had right lower quadrant pain and tenderness. The one postpartum patient in this study followed Baer's hypothesis in that she presented with pain and point tenderness below McBurney's point.

May Be Confusing

The evaluation of the symptoms referable to the gastrointestinal tract during pregnancy may prove rather confusing. In this study nausea was present in 72.7 per cent, vomiting in 81.8 per cent, diarrhea in 9.1 per cent and constipation in 9.1 per cent of the cases. According to Hoffman and Meiling the gastrointestinal symptoms are especially confusing in those cases of acute retrocecal appendicitis or in those cases where the appendix is high in the region of the right kidney.

The differential diagnosis of acute appendicitis during pregnancy trimesters should include the following:

A. During the first trimester:
1. Ectopic pregnancy
2. Salpingitis
3. Early threatened abortion
4. Ovarian tumors and twisting or acute necrosis
5. Renal or ureteral calculi

B. During the second trimester:
1. Nephritis and pyelitis
2. Acute cholecystitis and cholelithiasis
3. Intestinal obstruction
4. Peptic ulcer
5. Mesenteric lymphadenitis or thrombosis
6. Renal and/or perirenal abscess
7. Threatened abortion
8. Torsion or necrosis of ovarian tumors
9. Renal or ureteral calculi

C. During the third trimester:
1. Premature labor
2. Placenta previa
3. Abruptio placentae
4. Eclampsia
5. Acute cholecystitis and cholelithiasis
6. Peptic ulcer
7. Nephritis and pyelitis

TABLE I

Age	*Maturity*	*Gr.*	*Para.*	*Temp.*	*Pulse*	*Vomit*	*Guarding*	*Rebound*	*Tenderness*	*Duration*	*W.B.C.*	*Pathology*	*Mother*	*Infant*	*Maturity*
21	70	1	2	99.2	78	+	+	+	RLQ	5 da.	6400	Acute Appendicitis	A	No follow-up	
24	139	1	0	98.6	94	–	+	+	RLQ	12 hr.	14750	Acute Appendicitis	A	ND	287
20	55	3	2	98.4	82	–	+	+	RLQ	72 hr.	10500	Acute & Chronic App. with Periapp.	A	ND	287
24	117	4	3	100	90	+	+	+	RLQ	24 hr.	17200	Acute & Chronic App. $\bar{c}$ Periapp. fecalith of appendix	A	ND	288
32	207	6	4	99.4	80	+	+	+	RLQ	16 hr.	9500	Acute App. $\bar{c}$ fecalith	A	ND	274
20	256	2	1	102.6	92	+	+	+	RLQ	14 hr.	11750	Acute purulent app.	A	ND	260
27	158	6	4	99	108	+	+	+	Peri-umb.	4 hr.	10250	Acute & Chronic App.	A	ND	269
25	119	2	1	99.2	120	+	+	+	RLQ	10 hr.	9850	Acute purulent app.	A	ND	280
38	76	15	14	99	112	+	+	+	RLQ	24 hr.	12750	Acute app.	A	No follow-up	
24	43	2	1	99.6	88	–	+	+	RLQ	24 hr.	14600	Acute & Chronic App. $\bar{c}$ Periapp. & focal abscess	A	ND	273
32	2 da.	11	10	99	100	+	+	+	RLQ	12 hr.	15250	Acute app.	A	ND	280

8. Torsion or necrosis of ovarian tumors
9. Renal or ureteral calculi

Early diagnosis is important and a careful history is imperative since it might become of greater significance than the physical findings especially if the latter are non-localized. Characteristically, the pain begins in the epigastrium preceded by a period of anorexia. The pain may persist here for eight or more hours and may be accompanied by an urge to defecate. Constipation is much more common than diarrhea and the use of various cathartics in the obstipated pregnant patient is fraught with danger especially in the face of vague abdominal signs and symptoms. As the inflammation increases the pain shifts to the right lower quadrant with rebound tenderness referred to this area. Pressure on the pregnant uterus from the left side will often elicit pain in the right lower or middle quadrants. The efficacy of rectal and vaginal examinations is variously reported in the literature. Early in pregnancy the vaginal examination has great value in differentiating acute appendicitis from pelvic inflammatory disease and ectopic gestation. However, as the pregnancy matures the rectouterine pouch of Douglas becomes displaced by the fetal head.

Laforet states that gangrenous appendicitis and appendiceal perforation are, respectively, five and three times more common during pregnancy. Perforative appendicitis with generalized peritonitis as a complication of pregnancy at or near term has been established to be about once in 16,000 deliveries. Babler, in 1908, reported that 103 of 207 undelivered patients and 18 of 28 puerperal cases were complicated by perforation of the appendix and development of generalized peritonitis. In the K. U. study only one patient had clinical symptomatology of peritonitis, no patients had perforative appendicitis, and one patient had a focal periappendiceal abscess.

Abortion and Premature Labor

The statistics on abortion and premature labor vary considerably. Laforet reported as follows: acute appendicitis 11.4 per cent and 33 per cent respectively, complicated by peritonitis in 55.6 per cent and 72 per cent respectively. Hoffman and Suzuki reported 13.1 per cent combined abortion and premature labor, while Varner reported 1.8 per cent and 5.4 per cent respectively. In the K. U. study two patients were lost for follow-up and one patient delivered a live-born infant four days postoperative at 260 days gestation.

The overall fetal mortality has been reported by Meiling as 34.6 per cent, by Renn as 16.75 per cent and by Prindle as 8.8 per cent. Hoffman and Suzuki reported their overall fetal loss at 20.4 per cent. In the K. U. study, there was no fetal mortality in the nine patients followed to delivery. Eight, or 72.7 per cent, of these patients delivered after discharge for treatment of their acute appendicitis.

Maternal mortality seems to be dependent upon the duration of the illness and the period of gestation. After the seventh month of pregnancy, it would seem that walling off of the infection is less likely, and widespread involvement of the peritoneal cavity is a greater possibility. Laforet reported an overall maternal mortality of 30 per cent, Babler 19 per cent, and Renn 9.1 per cent. Mussey reported no deaths in 26 cases; but in another series of 122 cases, he reported two maternal deaths, one in the sixth and one in the seventh month of gestation. Baer reported no maternal deaths in 28 cases, and Meiling two deaths in 26 cases. Both of Meiling's deaths occurred during the ninth month. There was no maternal mortality in the K. U. study, with 54.5 per cent of our patients in the second and third trimesters and one patient in the puerperium *(Table IV)*.

TABLE II

PARITY AND DURATION OF PREGNANCY

	Localized to Appendix (10 Cases)	*With Peritonitis (1 Case)*	*Total (11 Cases)*
I. Parity			
a. Primiparous	1 (9.1%)		1 (9.1%)
b. Multiparous	9 (81.8%)	1 (9.1%)	10 (90.9%)
II. Gestation			
a. 0-90 days	4 (36.4%)		4 (36.4%)
b. 91-180 days	3 (27.3%)	1 (9.1%)	4 (36.4%)
c. 181-270 days	2 (18.2%)		2 (18.2%)
d. Postpartum		1 (9.1%)	1 (9.1%)

TABLE III
CLINICAL HISTORY

	Localized to Appendix (10 Cases)	*With Peritonitis (1 Case)*	*Total (11 Cases)*
A. History of previous attacks			
1. No previous attacks	7 (63.6%)		7 (63.6%)
2. Previous attacks	3 (27.3%)	1 (9.1%)	4 (36.4%)
B. Symptomatology			
1. Nausea	7 (63.6%)	1 (9.1%)	8 (72.7%)
2. Vomiting	8 (72.7%)	1 (9.1%)	9 (81.8%)
3. Generalized abdominal pain		1 (9.1%)	1 (9.1%)
4. RLQ pain	9 (81.8%)	1 (9.1%)	10 (90.9%)
5. Two or more of the above	7 (63.6%)	1 (9.1%)	8 (72.7%)
C. Duration of Symptoms (11 cases operated upon)			
1. 0-24 hours	8 (72.7%)	1 (9.1%)	9 (81.6%)
2. 25-48 hours			none
3. 49-72 hours	1 (9.1%)		1 (9.1%)
4. More than 73 hours	1 (9.1%)		1 (9.1%)

Later Deaths

An increase in mortality in the later months of pregnancy is found throughout the literature. This seems attributable in part to the delay in treatment due essentially to difficulty in diagnosis. Three contributory factors seem to confuse the picture and by subsequent delay place the patient in an increasingly hazardous position. Mention has already been made of the displacement of the appendix upward into the abdomen. This tends to alter the position of the signs and varies the symptoms, thus confusing the picture. Next, the appendix, no longer a pelvic organ, lies in contact with the coils of small intestine and alongside of a large globe-shaped contractible organ, the uterus. Should perforation occur, localization of an abscess is made difficult or nearly impossible for the following reason: in the presence of peritonitis the alimentary viscera cease movement, while the uterus does just the reverse. Thus attempts at adhesion formation to localize the infection will be nullified by such movements. Labor with subsequent delivery, because of the associated rapid reduction in the uterine volume, will further aggravate the condition as the inner wall of the abscess cavity will be torn away and all adhesions will be broken.

Lastly, another factor which may contribute to the delay is the clinician's hesitation to perform laparotomy at, or near, term in the presence of an otherwise normal pregnancy. It would seem that the penalties of a missed appendicitis would justify the occasional unnecessary laparotomy. Most authors tend to agree that pregnant women tolerate even major surgical procedures quite as well as their non-pregnant counterparts; however, under ordinary circumstances, operation prior to and including the twelfth week would seem best avoided for fear of precipitating miscarriage.

TABLE IV
PREVIOUS ATTACKS

History of Previous Attacks	*0-90 Days*	*91-180 Days*	*181-280 Days*	*281-*
Yes	1 } 27.3%	2 } 36.4%	1 } 18.2%	0
No	3	2	1	1
			63.6%	(2 days postpartum)

TABLE V
CLINICAL OBSERVATIONS

	Localized to Appendix (10 Cases)	*With Peritonitis (1 Case)*	*Total (11 Cases)*
A. Fever			
1. Below 98.9° F.	2 (18.2%)		2 (18.2%)
2. 99-100.4°	7 (63.6%)	1 (9.1%)	8 (72.7%)
3. 100.5-102°			none
4. Above 102° F.	1 (9.1%)		1 (9.1%)
B. Abdominal findings			
1. RLQ tenderness	9 (81.6%)	1 (9.1%)	10 (90.9%)
2. Rebound	10 (90.9%)	1 (9.1%)	11 (100%)
3. Bowel sounds absent		1 (9.1%)	1 (9.1%)

The earliest observations on the high mortality of this disease attributed this entirely to the high position of the appendix and consequently poor localization of signs and symptoms. This promoted a move towards immediate evacuation of the uterus regardless of the maturity. Instead of treating this disease on its own merits and allowing the pregnancy to remain undisturbed, large numbers of cesarean sections, cesarean hysterectomies, and surgical inductions were done with disastrous results.

Perforated Appendix

Despite this the perforated appendix merits special consideration in the last month of pregnancy where a viable child with a reasonable chance of extra-uterine survival exists. Quite apart from the likelihood of premature labor there exists a special risk of intra-uterine fetal death if the infant is allowed to remain in utero in the presence of peritonitis. It is well known that this can occur in any severe constitutional disease and is probably due to continuation of high pyrexia together with possible bacterial toxemia. It is not clear why this should occur and there has been considerable speculation by many authors. Easton believed that the prolonged rise in temperature might increase the metabolic rate and therefore the oxygen requirements of the fast developing tissues. He stated that it might be possible to reach a point where the demand exceeded the supply, and this may occur at a time when placental efficiency was diminishing. It has also been recognized that fast growing tissues are especially susceptible to noxious stimuli. DeVoe suggested that acidosis occurring in a case of perforated appendicitis, postoperatively, was responsible for an intra-uterine death and recommended rapid correction of the acidosis with five per cent solution of sodium bicarbonate in an attempt to preserve intra-uterine life.

TABLE VI
LABORATORY FINDINGS

	Localized to Appendix (10 Cases)	*With Peritonitis (1 Case)*	*Total (11 Cases)*
A. White Blood Cell Count			
1. 0-10,000	3 (27.3%)		3 (27.3%)
2. 10,000-15,000	5 (45.5%)		5 (45.5%)
3. 15,000-20,000	2 (18.2%)	1 (9.1%)	3 (27.3%)
B. Polymorphonuclear Leukocytes			
Above 80%	7 (63.6%)	1 (9.1%)	8 (72.7%)
C. Nonfilamentous Polymorphonuclear Leukocytes			
1. 0-10%	2 (18.2%)	1 (9.1%)	3 (27.3%)

Operative Maneuvers

In general, operative maneuvers to terminate pregnancy are contraindicated save where forceps delivery can more rapidly complete the second stage of spontaneous labor and where lower segment cesarean section is done for an overriding obstetrical reason. The view that when peritonitis is present cesarean section should be performed is condemned by several authors (Babler, Hoffman, Cosgrove and DeVoe). However, cesarean hysterectomy in the more severe cases of abscess formation may prove lifesaving.

Thus, it would seem that there is little doubt that the best way to save the child is to remove the appendix before perforation and peritonitis occur. Also, it is doubtful if, even with modern chemotherapy and antibiotics, it is ever justifiable to incise the uterus in the presence of peritonitis. There are considerable differences of opinion on this question.

In general, early removal of the inflamed appendix should be supplemented with antibiotic treatment with careful regulation of fluid and electrolyte balance if the fetal as well as maternal death rates are to be further reduced. A significant improvement in the mortality from perforated appendicitis may, in part, be due to the use of antibiotics. Crile has been successful in the treatment of peritonitis with penicillin. He favored the use of 100,000 units of aqueous penicillin every two hours until the patient showed definite signs of improvement. He then decreased the dosage to 50,000 units. Kennedy, McCadie, and Arminski reported series of 80 cases of peritonitis treated with penicillin. They favored smaller dosage of penicillin, 50,000 units, but stated that better results were observed when these smaller doses were combined with sulfonamides. Other authors believe that conservative management with penicillin and streptomycin is desirable.

While the use of antibiotics did not alter the K. U. statistics, the improvement must also be due to an increase in awareness of this complication of pregnancy by the practitioner and improvement in therapeutic standards and efficiency in general. A greater willingness on the part of the patient to seek early treatment, improved nutrition and living standards all play their parts.

Treatment of Choice

The treatment of choice for this complication of pregnancy is appendectomy. The diagnosis is not particularly difficult and with modern surgical technique the maternal and fetal mortality is not increased. As implied above, appendectomy is also the treatment of choice during the last trimester. Conservative medical management only provides for a recurrence of the acute appendicitis and its inherent hazards. Most authors believe that cesarean section should be done only in the rare case. Thus it would seem that appendectomy, regardless of the period of gestation, is the proper treatment of this complication of pregnancy. Hoffman emphatically states that interference with the pregnancy is a violation of basic surgical principles.

It seems that Babler's precept of 1908, concerning the dangers of delay, has not, in the light of recent advances in technique, knowledge and therapy, been in any way modified. The early removal of the appendix provides the best chance for survival to both the mother and infant. A disease which carries with it a maternal mortality of about 20 per cent in the last trimester of pregnancy and an overall fetal loss of almost 30 per cent deserves the most strenuous efforts at improvements in diagnosis and treatment.

Editor's Note: References may be obtained by writing the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 315 W. 4th Street, Topeka, Kansas.

Triamcinolone Acetonide

(Continued from page 563)

occurrence by careful orthopedic technique in entering the joint and by the strict observation of sterile technique throughout the procedure.

3244 E. Douglas St.
Wichita 8, Kansas
Department of Orthopedics

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Speakers for K.M.S. Annual Meeting

The following are the speakers for the Kansas Medical Society May 1-2-3, 1961 annual meeting to be held in Wichita, Kansas at the Broadview Hotel.

RALPH F. BOWERS, M.D.

Graduated Johns Hopkins University 1925, M.D. degree, Chief of the Surgical Services at Veterans Administration Medical Teaching Group, Hospital, Memphis, Tennessee. He will speak on Hypertension and Jaundice.

WILLIAM HOLLANDER, M.D.

Graduated State University of New York at New York City, College of Medicine, 1949, M.D. degree. He is an associate member Evans Memorial Hospital, associate visiting physician, Massachusetts Memorial Hospital, and physician in charge of the Hypertension Clinic, Massachusetts Memorial Hospitals. Dr. Hollander will speak on Hypertension.

A. W. MOYER, Ph.D.

His degree is in Biochemistry. A graduate of Cornell University Medical College, Ph.D. degree. He is on the Lederle Laboratories Staff in the Section of Virus Research. His speech will be on Viral Research.

ERNEST JAWETZ, M.D.

He is a graduate from the University of New Hampshire, M.S. degree, graduate University of California, Ph.D. degree, and graduate Stanford University, M.D. degree. Dr. Jawetz is a noted Randall Lecturer, Antibiotics Symposium, Washington, D. C. His topic is the "Antibiotic Jungle."

HANS POPPER, M.D.

Graduated from the University of Vienna, M.D. degree, also he is a graduate University of Illinois, M.S. degree, and a graduate from the University of Illinois, Ph.D. degree in Pathology. Presently he is Pathologist-in-Chief, Mount Sinai Hospital, and Professor of Pathology, Columbia University, New York. He will speak on Viral Diseases.

Plan now to attend. Watch the JOURNAL *for more information about the 1961 meeting.*

The President's Message

Dear Doctor:

Following my experience in the hospital, where I spent three weeks and during which time I received every test devised for making a differential diagnosis, I fully understand the meaning of Blue Cross-Blue Shield. I have also just recently attended a meeting of Blue Shield Plans in Chicago, which was instructive and made one very conscious of the part played by the Plans as a deterrent to socialized medicine.

We in Kansas owe a great deal to those of our Society who have brought the Plans from infancy through many hardships and criticism to their present status. We also owe to those now serving on committees who are at all times striving with the help of management to give more to users in the way of benefits at the cheapest possible rates. The Board and its Executive Committee give a great deal of time, but special mention should be given to Review Committees whose unselfish service is invaluable to the doctor and to the subscriber.

The members of our Society should co-operate in every way to further the success of our Plans as with the growth of the Plans we can be doing our part in preventing the encroachment of socialized medicine. We will also be doing a great public service in giving a helping hand to the aged. The more people that can be enrolled is a step in the right direction.

Yours very truly,

President

The M.D. and the L.P.N.

JOHN E. SWEENEY, M.D., ***and*** **EILEEN RIDGWAY, R.N.,** ***Topeka***

Modern medical care requires the services of many people besides the physician. Although he is the central figure in the medical "team," no physician can provide the kind of care he has been trained to give without a host of ancillary assistants. At the present time there are some three and one-half licensed professionals in allied fields for every physician in this country compared to one, 50 years ago. The largest single group of these professional co-workers is of course composed of registered nurses.

Still there is a problem in providing adequate nursing care. Although the number of nurses has steadily increased, and, more significantly, the number of nurses in proportion to the population has increased, there remains a demand for more people to assist in the care of the sick. This results in part from the increasing complexity of modern medicine and from the increasing use of the hospital for patients formerly cared for in the home usually by members of the family.

Another somewhat less tangible cause of this "shortage" seems to lie in the fact that the graduate registered nurse is not being trained primarily for the job of "bedside care." As many nursing duties have become more complex and entail more responsibility, better prepared nurses have been demanded. At the same time, educational standards and licensing requirements for nurses have been raised. The graduate nurse is now used in positions of maximum responsibility and her chief value lies in the ability to exercise judgment in situations for which she has been prepared.

A Guest Editorial from Dr. John E. Sweeney, Topeka, and Eileen Ridgway, R.N., M.S., State Supervisor, Practical Nurse Education, Topeka.

Saved for Special Talents

Indeed, today's hospital administrator cannot afford to let the registered nurse dwell too long at the bedside, just as the physician in his office doesn't want to waste her skills in bookkeeping, stenography, and the like. Instead, wherever possible, the registered nurse is being relieved of duties which do not actually require her special abilities. These duties should be assigned to persons properly trained for the task, but too often, bedside nursing care is assigned to untrained people who are supposed to function under direct supervision. Within our hospitals particularly, the corps of "aides" has grown tremendously. Many times, the only qualification is a signature on the payroll and spending a few days in "orientation," yet, 56 per cent of the nursing care in Kansas hospitals is given by aides.

Thirty-three years ago an un-named editorialist of this JOURNAL (quoted in the May 1959 Centennial Issue, page 144) proposed a solution that is now gaining growing acceptance: *". . . a nurse who has had a year of thorough hospital training would fill the requirements of ordinary cases. When the exigencies of the case demand the services of one acquainted with symptomatology and course of a disease, one competent to meet such emergencies as are likely to arise, the graduate nurse must be employed."*

At the present time in Kansas there are four approved schools of practical nursing providing one "year of thorough training" in "bedside" nursing. Three of the schools, located in Topeka, Wichita, and Dodge City, are under the administration of the local boards of education and the State Board for Vocational Education. The fourth, the Florence Cook School in Kansas City, is part of the University of Kansas Medical Center. Graduates of these schools

must comply with licensing regulations established by the State Board for Nurse Registration and Nursing Education and pass the national licensing examination obtained through the National League for Nursing.

The schools of practical nursing are designed to prepare practical nurses for two roles. The first role is the care of patients in situations relatively free of scientific complexity with a minimum of on-the-spot supervision. In this role, the practical nurse, under the direction of a registered nurse or physician, may take responsibility for nursing patients who are not in a critical condition—new mothers and babies, the chronically ill, convalescents, the aged, etc. The second role is that of assistant to a nurse who is qualified and expert in a more complex nursing situation. In this role, a practical nurse prepares equipment, supplies, and facilities for the registered nurse who is responsible and assists her as she gives nursing care.

In order to meet licensing requirements, the student practical nurse spends approximately four months in the classroom and at least eight months in hospitals, rotating through the medical, surgical, obstetrical, and pediatric services. Under the direction of qualified registered nurse instructors, they learn to give skilled nursing care to patients in all nursing situations where judgment based on a minimal scientific background is sufficient. Upon successful completion of this program, students are then eligible to write the licensing examination, and if they pass, to use the letters L.P.N. on their caps and after their signature.

In Kansas there are 162 general hospitals; 442 licensed nursing homes, boarding homes, and homes for the aged and six state hospitals with a combined total of 27,230 beds available for medical and nursing care in this state. Based on recommendations in the recent Survey of Nursing Needs and Resources in Kansas, we should have approximately 5,000 L.P.N.'s available today for all hospitals and nursing homes to provide 40 R.N.'s, 20 L.P.N.'s and 40 nurse aides per 100 patients. However, there are only 1,103 L.P.N.'s currently licensed in Kansas and job opportunities for the L.P.N. are multiple and varied. Employers in doctors' offices, clinics, public health agencies, and industries (as well as hospitals and nursing homes), have found the services of L.P.N.'s very satisfactory.

As the individual physician learns more about the L.P.N., her abilities, skills and limitations, he will find a valuable assistant in many aspects of medical care. Many of the nursing functions in a doctor's office can be skillfully performed by the L.P.N. She is ideally suited for home care of chronically ill and convalescent patients. Full utilization of L.P.N.'s in hospitals and nursing homes would result in improved care of physicians' patients and would promote economy since the turnover rate of L.P.N.'s is the lowest of any nursing group.

The physician's knowledge and support of the practical nurse program could add greatly to the effort being made to supply the people of Kansas with skilled and safe nursing care. The programs are expensive. Although Federal funds are available to the states for the development and promotion of practical nurse education, these funds must be matched by state or local money. Continued operation and future expansion of our schools will depend on the interest and the cooperation of the medical profession.

Many times the family doctor has been instrumental in guiding young women into nursing. There is a place in nursing for anyone who desires to use his or her talents for giving service to others. Highly motivated girls and young women have frequently been discouraged from pursuing nursing as a career by failure to qualify for admission into schools for professional nursing or inability to devote three or four years to the pursuit of nursing education. Still others, for economic reasons, have sought employment as nurse aides, submerging their desires for training and advancement to the expediencies of personal and family obligations. Physicians can help to direct those who seek counsel by pointing out the merits of the practical nurse program.

The need for well trained "bedside" nurses is apparent. The L.P.N. can satisfy, in part, these needs. The cooperation and support of the medical profession can help immeasurably in the promotion of the practical nurse program.

Where there is much desire to learn, there of necessity will be much arguing, much writing, many opinions; for opinion in good men is but knowledge in the making.—*John Milton*

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The Business Side of Medicine

What to Look for in Growth Stocks

FLOYD F. WEHRENBERG, Kansas City, Missouri

Although the term "growth stocks" is one of the most common investment terms, it is also one of the least understood and hardest to define. In its broadest sense a growth stock is one which increases in value over a period of years, and does so at a faster rate than the market average. Other fundamental requirements are long term outlook in the industry and in the particular company, outstanding management ability, active research programs, sound finances and well-protected profit margins. Most growth stocks have a record of expansion, of new and improved products at lower prices and of more jobs at good wages.

Here's What to Look For

In selecting a growth stock, there are three general rules which investors should apply.

1. The industry must have a good future. Economic expansion has a tendency to move from one industrial group to another with increasing emphasis of scientific and technical development. Stock prices tend to move in industrial groups and the degree of selectivity is greater today than ever before. Mere selection of a growth industry, therefore, will not guarantee investment success. For example, over the past 25 years the automobile industry has enjoyed spectacular growth, while today all but a few of some 2,000 companies which have entered the industry have been eliminated by the severe competition in the industry.

Mr. Wehrenberg is Missouri-Kansas Manager, Professional Management Midwest, 4010 Washington Street, Kansas City, Missouri.

2. Management must be alert and competent. Prospective investors should give careful study to this factor. A corporation's record will reveal the type of management it has and identify that which is good. This is especially true when a company consistently outperforms its competitors.

3. The company should be financially well situated in its particular field. It is true that a few cash-short companies eventually become successful, however the average investor is much better off with a stake in a strong, well-financed company which has sufficient reserves to withstand temporary reverses.

Also Must Have These

Besides these three broad rules, a particular company should show at least four other characteristics. These are rising sales and earnings, expanding plant and equipment, rising net working capital, and no dilution of common stock.

Generally speaking, growth stocks cannot be expected to yield high dividends. While the average industrial stock today yields approximately four per cent, the average growth stock returns about two per cent due to the market popularity of growth stocks and to the use of profits for expansion and new development. For the person in a high tax bracket who is more interested in future appreciation than in present yields, this situation is ideal.

Issues of the growth type need somewhat closer management than other issues which emphasize income, but if this slightly greater risk is assumed the rewards can be greater.

Rates May Be Reduced in 1961

It is expected that the Blue Shield dues will be reduced in 1961. This reduction in Blue Shield dues was made possible by a lower use of services. Blue Cross dues will be increased slightly because of higher costs of hospital care. These dues adjustments will result in an overall dues decrease for the coming year for a portion of the Blue Cross-Blue Shield members and only a slight increase for others. These adjustments will be confirmed and members informed following final approval by the State Commissioner of Insurance.

One of the major Blue Shield goals for 1960 was to build the required reserve to the adequate level of three months case and operating expense. This goal was achieved and the new lower dues for both Schedule I and Schedule II were approved last month by the Blue Shield Board of Directors.

Some Minor Changes

"Some of these adjustments," Blue Cross and Blue Shield staff points out, "will *reduce* the Blue Cross-Blue Shield rates in certain categories of membership, and any increase in other areas of membership will be very nominal. The fact of the matter is, *any* increases that are necessary will be considerably less than at any time for a number of years.

"In the non-group and Farm Bureau category, representing 43 per cent of the Kansas members, there will actually be *decreases* in the over-all dues ranging from 30 cents to one dollar.

First Time for a Decrease

Although there have been a number of years in the past when no change has been made in dues, this is the first time that there has been a decrease in the over-all Blue Cross-Blue Shield dues picture for even a portion of the members.

Financial Picture Studied

Each year, the financial position of Blue Cross and Blue Shield is reviewed by the Blue Cross and Blue Shield Boards, as well as the Insurance Department to determine whether or not dues are adequate to maintain the hospital-surgical benefits for members for the coming year.

When the Blue Shield Board studied the financial picture of the Plan this year, it had the choice of increasing benefits, or decreasing dues, and it seemed more practical at this time to adjust the dues.

Reasons for any changes in the dues this year are described as follows:

- Blue Shield dues will be *decreased* because the use and cost of Blue Shield services by members during the past year were less than had been anticipated.
- Blue Cross dues will be increased and the factor responsible for that increase is the continued increasing cost of hospital care. Actually, the use of Blue Cross services by members for the past year remained about the same.
- Members' use of the Extended Benefits Riders has been less than expected, making it possible to lower those dues, also.

All to Be Informed

All members of Kansas Blue Cross-Blue Shield will be personally notified before any changes are made in their billing. For many of the employee groups in the state, new dues will be announced as usual by the Blue Cross-Blue Shield Representative in the area on the regular reopening dates, and the schedule below will not necessarily be effective for them on January 1, 1961.

Following is a table showing the rate adjustments for those members who have Blue Cross, Blue Shield and the Extended Benefits Riders. This includes the majority of the members.

	Employee Group BC-BS-EBR	*Non-Group* BC-BS-EBR	*Farm Bureau* BC-BS-EBR.
Present Dues	$11.70	$14.70	$13.10
New Dues	12.10	14.40	13.00
Difference	$ .40 add.	$ .30 less	$ .10 less

- Single dues in all areas are exactly one-half of family dues.
- The dues listed above include the Blue Shield Schedule I Program. For members who have the Blue Shield Schedule II, the rate for that Plan will be decreased considerably more for both group and non-group members.
- All members of Blue Cross-Blue Shield will have their EBR dues reduced from 60 cents to 40 cents for family and from 30 cents to 20 cents for single members. This reduction is included in the chart above.

Operating Costs Lower

It was particularly emphasized that any increase in members' rates is not caused by any increase in the Plans' operating expenses. As a per cent of income, operating costs have decreased from 8.2 per cent in 1959 to 7.2 per cent in 1960. This means that only a little more than seven cents of every dues dollar is all that is needed to administer the programs.

Membership Up Nationwide

The 74 Blue Shield Plans located in North America reported a net gain of 151,394 new members during the second quarter of 1960, bringing total enrollment to 45,798,636 as of June 30, the National Association of Blue Shield Plans announced.

The second quarter Blue Shield growth included the enrollment of Surgical Service, Inc., the Plan serving the State of New Mexico. Recently approved as an active member of the National Association of Blue Shield Plans, the 58,218 membership of the New Mexico Plan was included in the national Blue Shield totals for the first time during the second quarter of 1960.

"Blue Shield now has enrolled one out of every four persons in the United States, and almost 15 per cent of the total Canadian population," the National Association indicated in its report.

Four Blue Shield Plans have enrolled more than 60 per cent of the population in the areas they serve, according to the National Association. They are the Plans serving the District of Columbia, Rhode Island, Delaware and Rochester, New York areas.

LOOK WHAT THEY'RE DOING WITH ATOMS

"Atoms for peace" is an exciting catchword. It conjures up visions of a day when high-speed atomic-powered ships will skim the seas, when controlled nuclear explosions will unlock minerals in frozen Polar wastes, when cheap electricity from atomic power plants will speed the industrialization of underdeveloped nations.

This kind of large-scale use of atomic power is still, by and large, just around the corner—or maybe not quite that close.

But few of us realize how much the peaceful atom is doing for us here and now—in the 15th year of the Atomic Age.

Atomic energy today is winning new victories for medicine in the battle against cancer and other killers.

It is helping farmers fight pests and improve their crops.

Motorists have atomic radiation to thank for the fact that some gasoline is much better than it was two years ago; housewives for superior quality of detergents. In fact, we're all in debt to the atom for helping dozens of manufacturers improve hundreds of products.

And all this work is being done by those marvelous man-made atoms called radioisotopes.

Today's nuclear reactors can produce an abundance of radioisotopes at low cost. Most are created by neutron bombardment; but it has also been found that many kinds can be chemically extracted from spent reactor fuel.

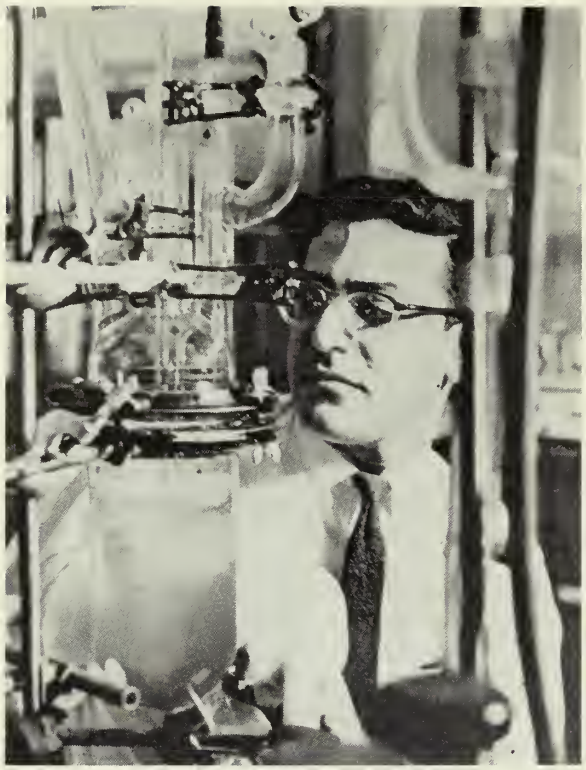
And radioisotopes have become so vital to science, industry, agriculture and medicine that they are rated by many experts as a scientific aid and tool as important as anything science has found or invented since the microscope.

They are used in three ways: as tracers, as sources for X-ray photography and as sources of irradiation.

Radioisotopes used as tracers can be compared to tiny radio stations sending out signals (radioactive rays) which can be detected and accurately measured by such devices as scintillators and Geiger counters. Used in small quantities, they do not affect physical or chemical processes. So it is possible to "tag" a small quantity of material, sometimes a single molecule, with a radioisotope and follow it wherever it goes—in metal, in fluids or in the human body.

On the farm, radioisotopes are used to trace the movement of fertilizer through plants, to provide information on naturally occurring nutrients in soils and how plants use them, to study the effectiveness of insect control and the habits of insect pests, by actually "tagging" the insects to discover their flight, migration and hibernation patterns.

And the jobs these tiny atomic detectives are doing for industry are too many to enumerate.



In an Esso Research lab, another lubricants project moves toward completion—with an assist from the man-made atoms known as radioisotopes. This member of a team of researchers follows progress of one of many tests in the successful development of a new motor oil. The ingredients are being synthesized by controlled agitation. Radioactive tracers were used to keep track of the molecules as they were built into a formula so complex that a huge electronic brain was needed to help prepare it. Scientists also used the atomic "detectives"—in a three-year project—to determine the gasoline components mainly responsible for engine deposits. Refineries then were able to eliminate the carbon-depositors. No radiation is used in the manufacturing process.

Soap and detergent manufacturers test their products by soiling fabric with "tagged" dirt and measuring the radiation that remains after washing. In the automobile industry, tracers measure the wear on gears, tire treads and distributor points.

There is hardly a major industrial area, in fact, in which tracers are not used and the extent is constantly increasing.

The second major use for radioisotopes has been found in the field of radiography.

Certain radioisotopes can "see" through objects and photograph as X-rays do. Their big advantage over conventional equipment is that they do not need electric current; this makes it posible to build small, portable X-ray machines which doctors can use in isolated locations and emergency cases.

Industry uses radioisotope X-rays to measure minute variations in thickness of materials, to look inside closed packages and cartons, and for hundreds of other tasks.

But the use of radioisotopes as a source of irradiation is the most revolutionary in many ways, and has perhaps the greatest potential of all.

Scientists have long known that radiation from radium and from X-rays affects the characteristics of the target it is shot at. And today, radioisotopes can take the place of rare, expensive radium or bulky X-ray equipment for irradiation of a cancer, a plastic, a foot product, or even air.

In industry, irradiation can improve the quality of plastics, it can control dangerous static electricity in the air of textile and paper mills, and do dozens of other jobs.

Later it may also come into general use to assist in the vulcanization of rubber or the actual refining of petroleum products. Both are possible, as proved in industry's scientific laboratories. However, the efficiency and economy of present processes will almost surely delay these two applications for the immediate future, as is the case with production of electric power from atomic energy.

In agriculture, irradiation techniques are being used to improve the quality of crops, check plant diseases and sterilize insect pests.

Many potentialities of the peaceful atom are still to be developed.

Within the next few years, atomic energy will begin to supply commercial electric power in many parts of the U.S. and the recent dramatic voyage of the atomic-powered submarine, U.S. S. Triton, around the world under water, indicates that nuclear power at sea is almost sure to contribute greatly to national security.

But the work radioisotopes are already doing is more than enough to prove that the atom can be as great a boon in a world at peace as it would be a source of terror in a world at war.

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Personalities—IN KANSAS MEDICINE

Dr. Wirt Warren, Wichita, attended the Cardio-Pulmonary Disease Conference in Denver, August 15.

Dr. C. C. Price, who has practiced medicine in Oswego since 1941, ceased active practice early this year.

Dr. and Mrs. Price have built a house in Texas on the farm of their son, Dr. William Price, orthopedic surgeon of Houston, and they are planning to move there.

Dr. Eugene C. Hwa, a specialist in radiology, is now practicing at Axtell Clinic, Bethel Clinic and at Axtell Christian Hospital. Later, he will practice at Bethel Deaconess Hospital.

He comes to Newton from Wichita where he was associate director of the department of radiology at St. Francis Hospital.

Dr. Hwa is a native of Shanghai, China, and is a 1947 graduate of the Medical College of Shanghai. He came to this country during the next year and interned at American Hospital in Chicago. He then took a year's residency in chest diseases at Mahoning County Hospital in Youngstown, Ohio.

Dr. David E. Gray, Topeka, attended the Third Regional State Medical Editor's Conference in Lexington, Kentucky recently. Dr. Gray is a member of the JOURNAL's Editorial Board.

Dr. Thomas P. Butcher, Emporia physician and surgeon, addressed a group of about 200 members and guests of the Woman's Auxiliary to the Kansas Medical Society, Flint Hills group, Tuesday afternoon at the Eureka Country Club.

As a recent past president of the Kansas Medical Society, and a member of committees working for proposed health and welfare legislation both in Topeka and in Washington, D. C., Dr. Butcher spoke on the subject of federal legislation relating to the welfare of the medically and financially indigent and aged.

Dr. James L. Salomon, Wichita, attended the Seventh Annual Postgraduate course in Aviation Medicine for Physicians and Scientists at the Health Center, Columbus, Ohio and **Dr. W. G. Cauble,** Wichita, attended the Fourth National Cancer Conference in Minneapolis, Minnesota.

Dr. Charles Pokorny of the Hertzler Clinic was at the Kansas University Medical Center recently for the annual meeting of the Kansas Tuberculosis and Health Association. Dr. Pokorny is secretary to the Board of Directors of the Tuberculosis Association and states that current emphasis is being placed on tuberculosis testing in the schools. It is hoped that a complete and comprehensive program can be set up during the coming year and that the plan for certification of Kansas schools during the Centennial Year be formulated.

Dr. Pokorny presided at the general sessions.

Dr. Leo E. Haughey of the Gelvin-Haughey Clinic, Concordia, was one of the speakers at the annual meeting of the American Association of Medical Clinics in New Orleans, La. The Association is composed of 115 approved clinics on the U. S. mainland and Hawaii. **Dr. M. C. Pearson,** also of the Clinic, attended the meeting.

A Wichita man, **Dr. Larry E. Vin Zant,** has been appointed to the Crusade Reference Committee of the American Cancer Society. The newly established reference committee of the organization is to provide a way of expressing local suggestions to the

NEW MEMBERS

The JOURNAL *takes this opportunity to welcome these new members into the Kansas Medical Society.*

Wilfrid J. Gardner, M.D.
800 East First
Newton, Kansas

Gerald L. Ward, M.D.
814 Washington
Ellis, Kansas

Walter C. Niederee, M.D.
1400 Polk Street
Great Bend, Kansas

entire membership of the Society. It also will provide a means of communications between local divisions and the national board.

Dr. P. L. Beiderwell was greatly responsible for bringing the need of a new hospital to the people of the Belleville community. Speaking in public groups, he pointed out that Belleville and Republic County were suffering from a shortage of doctors and that the situation was likely to get worse unless adequate hospital facilities were provided for the area's medical profession.

Later a group of Belleville citizens traveled about the county setting up the nucleus of a hospital board. This was done in order to give each area of the county representation.

Dr. Leo P. Cawley, Wichita, spoke before the Wichita Section of the Instrument Society of America, on September 12. His topic "Automatic Instrumentation Use in the Medical Laboratory."

Dr. James A. Powell established a medical practice at Council Grove recently.

He will take over the facilities and occupy the offices at the clinic of the late Dr. N. A. Burkett.

The doctor was graduated from the University of Missouri School of Medicine and had his internship at the Gorgas Hospital in Panama City, Canal Zone. He has been practicing at Douglass.

Dr. J. S. Menaker, Wichita, attended the American College of Obstetrics and Gynecology meeting in New Orleans, September 16-17.

Dr. Jesse D. Rising, a member of the staff of the University of Kansas Medical Center for 21 years, has been named chairman of the department of postgraduate medical education.

The appointment was made by the Kansas Board of Regents Oct. 14.

The physician, a Kansas City native, received his medical degree from K.U. where he also interned and taught in 1939. He practiced medicine in Kansas City from 1940 to 1953 at which time he became affiliated with the medical school on a full-time basis. He formerly was associate professor of medicine and pharmacology.

He replaces **Dr. Mahlon H. Delp,** who was named chairman of the department of internal medicine Sept. 16.

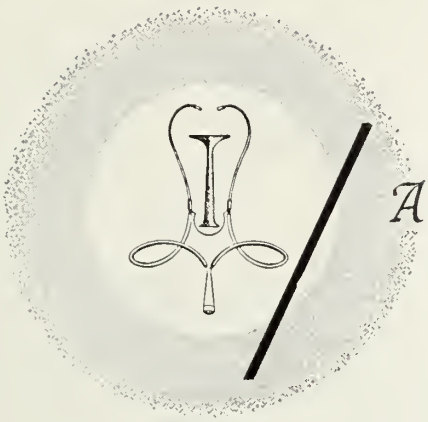
Dr. Rising is an associate Editor of the JOURNAL.

Dr. C. H. Munger, director of the Lyon County Health Department, has concluded 28 years of full-time service in that capacity. Effective Saturday, Oct. 1, Dr. Munger retired but will work part-time in the County Health Unit office at the Courthouse.

Dr. Munger has headed the Lyon County Health Unit since 1932. He entered public health work in Kansas in 1908 and was honored last April in Wichita at the convention of the Kansas Public Health Association.

Dr. H. F. O'Donnell, Wichita, attended the South Central Section meeting of the American Urological Association in Albuquerque, September 25-29.

Be THANKFUL on THANKSGIVING
And Be THINK-FUL
While YOU Are Driving



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. *Notice of the session is posted in advance to allow the physician time to make preparations.*

The Department of Otolaryngology, University of Illinois College of Medicine, will conduct a postgraduate course in Laryngology and Bronchoesophagology from March 13 through March 25, 1961, under the direction of Paul H. Holinger, M.D.

Registration will be limited to 15 physicians who will receive instruction by means of animal demonstrations and practice in bronchoscopy and esophagoscopy, diagnostic and surgical clinics, as well as didactic lectures.

Interested registrants will please write directly to the Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12, Illinois.

The Second Annual meeting of the Kansas Association of Blood Banks will be held on December 2 and 3, 1960. The meeting will be in cooperation with the Kansas Society of Pathologists, Kansas Society of Medical Technologists, American Association of Blood Banks, and University of Wichita. A Workshop will be conducted in the Biology Department at the University of Wichita on December 2. Twenty Workshop participants will be selected from among medical technologists and technicians who are working in Kansas Hospital Blood Banks. A full day of activities is planned, including lectures by Workshop Faculty, and the actual performances of modern Blood Banking and Immunologic techniques.

A Scientific Program is scheduled for December 3 at Sedgwick County Medical Society. Moderators for the meeting will be: John E. Johnson, M.D., Director of Laboratories, Bethany Hospital, Kansas City, Kansas; and Hans T. Lettnrer, M.D., Director of Laboratories, Grace Hospital, Hutchinson, Kansas. Notable guest speakers will include: Clifford Argall, M.D., Director of Blood Banks, Baptist Memorial Hospital, Memphis, Tennessee; Robert Anderson, M.D., Instructor in Pathology, University of California, Los Angeles, California; Paul J. Schmidt, M.D., Chief, Blood Bank, National Institutes of Health, Bethesda, Maryland; Jack Carter, M.D., Chairman, Department of Pathology, University of Kansas Medical Center, Kansas City, Kansas; and Mary Joel Veischoyle, M.T. (ASCP), Department of Laboratories, University of Kansas Medical Center, Kansas City, Kansas.

The Committee on Motion Pictures of the American College of Chest Physicians is interested in learning about new films on diseases of the chest (heart or lungs) for possible presentation at the 27th Annual Meeting of the College in New York City, June 22-26, 1961.

Films accepted for presentation in the annual motion picture program are eligible for the 1961 Film Contest. The committee is also interested in reviewing new motion pictures for inclusion in the Approved Film List of the American College of Chest Physicians.

Physicians are invited to forward all pertinent information concerning their films to Dr. Paul H. Holinger, Chairman, Committee on Motion Pictures, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

In one year, your heart pumps enough blood to fill over 100 railroad tank cars. In one tenth of a second, your bones produce 300,000 red blood cells —each one a tiny bit of life. Each week, you exhale more than enough air to inflate a balloon the size of a 12′ by 27′ living room.

The Kansas Press Looks at Medicine

***Editor's Note.** In this section the* Journal *reproduces editorials relating to medicine which have appeared in the lay press. An effort is made to include both favorable and unfavorable comments, and the Editorial Board in no instance assumes responsibility for the opinions expressed.*

Drug Probe Producing Results

Americans may receive more protection in use of drugs as a result of investigations by the U. S. Senate last spring.

A National Academy of Sciences committee this week recommended a law authorizing the Federal Food and Drug Administration (FDA) to require proof of the efficiency as well as the safety of new drugs. The aim would be to protect patients from treatment with an ineffective drug.

The investigation of misleading information to doctors about new drugs began last winter when John Lear, science editor for *Saturday Review* magazine, did an expose of advertisements in pharmaceutical journals using false names and misleading data. Later Dr. Henry Welch, head of the antibiotics division of the FDA, resigned following charges that he had accepted large sums of money from the drug industry for writing articles on antibiotics. Then the Kefauver committee of the Senate began its probe.

The recommendations of the National Academy group are indorsed by Health and Welfare Secretary Flemming. They include 11 points involving certification procedures, factory inspection, controls on packaging and manufacture, accuracy of information to doctors and proper labeling. Action by Congress will be required to put them into effect.

The American Medical Assn. in the past has stayed out of the argument over drugs. However, now it is reported that the AMA will enter the matter in an attempt to eliminate the duplication of expensive drugs and to reduce costs.

These notes of progress are heartening. For if there is anything the public has a right to expect it is safety, effectiveness and economy in the drugs it gets —whether from doctor or pharmacy.—*Wichita Evening Eagle and Beacon,* October 8, 1960.

Improving Rural Health Discussed

BY GORDON WEST
(ASSOCIATE EDITOR KANSAS FARMER)

Improving rural health for Kansas came in for a good deal of lively discussion in Manhattan, Oct. 9, when the Kansas Medical Society's Rural Health Council held its first meeting. Steps to organize the council were taken last February. Purpose of the group is to promote programs for the improvement of rural health in Kansas. An important service will be the publishing of the latest information on research developments in better health. *Kansas Farmer* magazine is a charter member of the new Kansas Rural Health Council.

At the recent fall meeting, we council members heard reports on public health programs available to rural people, a doctor's duty to the rural community, health needs of rural communities, publishing articles on medical developments, Rural Civil Defense Program, rising cost of medical and hospital expenses, and activities of the Kansas State Board of Health in rural areas.

A great need in rural communities at present is more first aid training, says Dr. J. M. Mott, Topeka, of the State Board of Health. He reported on a recent first aid training course conducted in Morris County. Rural women in home demonstration units worked hard and have achieved excellent results.

Another development in Kansas reported at the meeting: Kansas now ranks fifth in the nation in number of migrant agricultural workers, most of them located in the western two-thirds of the state. This poses problems in health, education and recreation.—*Topeka Daily Capital-Journal,* October 16, 1960.

KMS Obituaries

A. R. HATCHER, M.D.

Dr. Albert R. Hatcher, 76, prominent Wellington physician and surgeon and founder of Hatcher Hospital, died September 16 in a hospital where he had been in critical condition.

He was born Dec. 27, 1883 in Allen, Kansas. He began his practice of medicine in Allen in 1908 coming to Wellington in 1910. Dr. Hatcher established and built the Hatcher Hospital in 1916.

He organized and was the first president of the State Hospital Association, of which he was the oldest living member at the time of his death. He also served as president of the Mid-West Hospital Association.

Dr. Hatcher was a veteran of World War I, having served in the Army Medical Corps. He was a member of the Masonic Lodge, Wichita Consistory, Wellington Elks Lodge No. 1167, Knights Templar, American Legion, First Presbyterian Church, a charter member of the Wellington Rotary Club and a member of the American College of Surgeons.

He became a member of the Society in 1933 and was a member of Tri-County Medical Society at the time of his death.

Survivors include the widow, Ethel, of the home; one son, Dr. Albert C. Hatcher; one daughter, Mrs. Karl Voldeng, both of Wellington; one sister, Miss Mary L. Hatcher of El Dorado and seven grandchildren.

ERNEST HARVEY, M.D.

Dr. Ernest E. Harvey, third generation of a family of physicians who ministered to Salina's ills, died Sept. 26 in St. John's Hospital. He was 47 years old, was born in Salina and lived there all his life except for years spent in World War II service and his years at college. The Harvey family began the practice of medicine in Salina in 1888.

Dr. Harvey was a member of the Saline County Medical Association, the Golden Belt Medical Association, Southwest Clinical Society, the American Medical Association, Western Railway Physicians and Surgeons Association, and the American College of General Practitioners. He belonged also to St. John's Lutheran Church, Salina Blue Lodge No. 60, Masonic order, and the Salina Rotary Club.

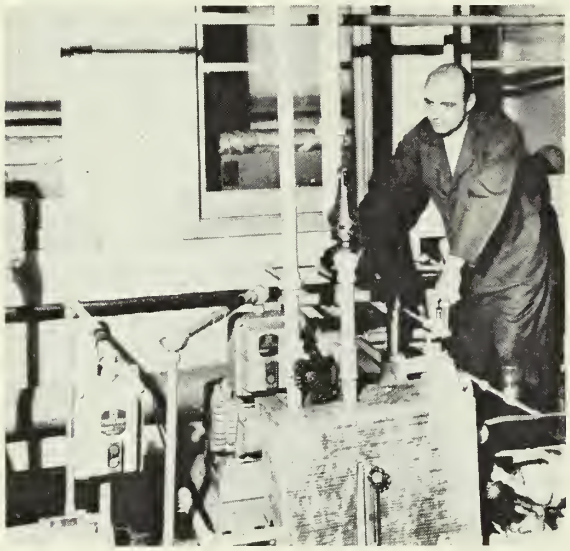
Dr. Harvey was born in Salina Oct. 17, 1912. He is survived by his widow, Ethelda; his mother, a son, a daughter, a brother, and a sister.

His son is preparing for a medical career, the fourth generation of the family to enter that profession.

From the Sea: Fresh Water

That "drop in the bucket" you hear people scoff at may soon become precious stuff . . . if it's water. Few Americans realize how the consumption of fresh water has soared and how ingenious some scientists have been in seeking ways to maintain an adequate supply in the face of the exploding demand.

One idea—closer to reality than most of us think and far more practical than it may sound—is to desalt the sea.



A technician adjusts dials on sea water conversion apparatus at the Struthers Wells Corporation plant in Warren, Pa. The apparatus is part of a process that freezes sea water in order to obtain fresh water in the form of ice crystals.

At the root of the supply problem is the fact that our future needs cannot be met by water from our lakes, rivers, and streams. The advent of air conditioning, automatic washers, and a host of other new products, not to mention the effects of improved plumbing and health standards, have upped our individual daily water requirements from 40 gallons in 1900 to 150 gallons or more today.

Industry's Thirst

Although great in themselves, individual requirements pale before the burgeoning demands of industry. The American industrial complex now uses an estimated 110 billion gallons of water a day to slake its ravenous thirst and it will need more than twice that much by 1980. It takes nearly 1,000 gallons of water to make just one automobile tire, 65,000 gallons to produce a ton of steel, and 200,000 gallons to process a ton of viscose rayon.

Our Water Supply Is Low

In testimony filed with a U. S. Senate Committee, Charles A. Robinson, Jr., staff engineer for the National Rural Electric Cooperative Association, warned that "our nation will dry up" unless appropriate action is taken.

Dr. Leroy E. Burney, Surgeon General, U. S. Public Health Service, has predicted that in 20 years, "the United States will be short 85 billion gallons of fresh water every day."

You needn't wait 20 years to see the shortage, however. In 1957, water supplies plummeted to dangerously low levels in 47 states, necessitating emergency measures in more than a thousand communities.

Dr. A. L. Miller, director of the Office of Saline Water, has this to say: "It is my personal opinion that should a severe drought occur, similar to those we endured in the early thirties and in the years 1953 and 1957, a real emergency would occur in thousands of cities and towns in the United States."

Interestingly, the problem isn't new. Ancient writings indicate that even before the Greek philosopher Aristotle tried his hand at it 2,300 years ago, efforts were made to obtain sweet water from the salty seas. This is why converting sea water to fresh has been called "the ancient dream of man."

The churning and swirling waters of a turbulent ocean . . . do they hold the solution to America's steadily-worsening water supply problems?

In the 16th century, when sailing ships began to

roam the seven seas, one of the most critical problems faced by their crews was an adequate supply of fresh water. In an effort to help her Navy, England's Queen Elizabeth I offered the equivalent of $50,000 (a vast fortune at that time) to anyone who could devise a commercially useful method of conversion.

About 200 years later, Thomas Jefferson conducted some successful distillation experiments, reporting to Congress in 1791: "From 16 pints of sea water he drew off 15 pints of fresh water in 2 hours and 55 minutes, with three pounds of dry hickory and eight pounds of seasoned pine."

Today, most major ocean-going vessels carry their own conversion equipment. Our aircraft carriers of the Forrestal Class, for example, have four 50,000-gallon-per-day evaporators to supply the water needs of these huge ships and their large crews. Land-based plants have been erected in several arid locations and many more are planned as the cost of conversion is reduced.

Since World War II, scientists around the world have been diligently searching for more efficient and less costly processes.

New on the horizon, but capturing the attention and imagination of the world, are the efforts now underway to produce fresh water from the sea by freezing.

Freezing Results

Scientists have known for a long time that ice crystals consist of pure water. Unfortunately, when sea water freezes, salt or brine is trapped between the crystals. Thus, desalting the sea by freezing gives rise to two major problems: first, to develop an economical method of freezing individual ice crystals, and second, to develop a practical method of separating these crystals from the salty brine.

Recently, Struthers Wells Corporation of Warren, Pennsylvania, and Scientific Design Company of New York City succeeded in developing a freezing process that features the formation and growth of large ice crystals. The result: a reduction in surface area which makes it far easier to separate and wash the crystals free of brine.

The two companies completed an engineering evaluation of their process in a laboratory model of the plant. The next step will be the construction of a large size pilot plant to provide a full scale test of this exciting new approach to the freezing method.

How It Works

The system operates this way: by bubbling a refrigerant through sea water under controlled conditions, large pure water ice crystals are produced and then washed free of salt in a centrifuge, leaving the ice free of brine.

If the system works, and laboratory tests give every promise of success, it will be a real step forward in the urgent search for a new, low-cost source of fresh water than can banish forever the specter of water shortage that now hangs heavy over our heads —for it will tap the world's biggest supply of raw material . . . the estimated 320 million cubic miles of sea water!

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Footnotes and References: Use the style of the *Quarterly Cumulative Index Medicus* published by the American Medical Association, which requires, in the order given: name of author, title of article, name of periodical, with volume, pages, month—day of month if weekly—and year as follows:

4. Doe, J. E., What I Know About It, J. Kans. M. S. 54:717-719 (Dec.) 1954.

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Under ordinary circumstances articles are scheduled several months in advance. Notice will be given the contributor when the article has been accepted and again before publication.

Society members throughout the state are encouraged to write up their interesting cases and submit them for publication. The editorial staff welcomes the opportunity of helping you prepare your article for the printer.

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Scientific
ARTICLES

Pericarditis With Effusion

A Chronic Nonspecific Case Is Presented and Discussed

DAVID LUKENS, M.D.; C. R. OPENSHAW, M.D., F.A.C.S.;
and* R. C. TOUT, M.D., *Hutchinson

A case of chronic nonspecific pericarditis with effusion successfully treated with subtotal pericardiectomy is reported. The outstanding features of the disease are discussed and the serious nature of its potentially disabling complications is stressed. The pertinent literature is briefly reviewed and the reasons for advising surgical treatment are stated.

Early extensive pericardiectomy is recommended as the procedure of choice in the management of this disease.

CHRONIC NONSPECIFIC PERICARDITIS with effusion is an unusual disorder which presumably follows acute benign idiopathic pericarditis or hemorrhagic pericarditis. Since 1950 several reports[1, 2, 3] have called attention to the fact that nonspecific pericardial effusions can persist for many months or even years, with ultimate production of severe disability and death as the result of the long term deleterious effects of cardiac tamponade or constrictive pericarditis. Recent papers[5, 8, 9] have stressed the importance of extensive resection of the pericardium prior to the development of constrictive pericarditis or irreversible myocardial changes. It is the purpose of this report to describe a patient treated with pericardial excision, to comment on several points of interest which this case illustrates, and to review the development of our present knowledge with respect to the management of such problems.

Case Presentation

This is a 25-year-old housewife who was discovered to have pericarditis with effusion in July of 1957. She had experienced mild substernal distress following an upper respiratory infection, but otherwise had no significant symptomatology and was able to carry out her usual activities as a mother and housewife. General physical examination revealed a pericardial friction rub and typical evidence of pericardial effusion without cardiac tamponade. Aside from these findings no significant abnormalities were made out. Examination of the blood showed Hemoglobin 13.5 gm. per cent, WBC 5700 with a normal differential, sed. rate 20 mm. in 60 minutes, heterophile agglutination negative, total proteins 7.6 gm. per cent, albumin 5.5, globulin 2.1, and L. E. Cell preparation negative. Urinalysis was entirely normal. Tuberculin skin test was negative. Electrocardiogram showed normal findings except for slight elevation of ST V6. Chest x-ray showed an enlarged, nondescript cardiac shadow compatible with a rather mas-

sive pericardial effusion *(Figure A)*. Pericardial paracentesis revealed watery, chocolate colored fluid which on laboratory investigation showed a red cell count of 18,000, white cells 53,000 (100 per cent lymphs), total protein 11.9 gm. per cent. Gram stain, acid

Figure A. Original chest X-ray showing an enlarged cardiac shadow compatible with pericardial effusion.

fast stain, routine and acid fast cultures showed no evidence of bacteria or tubercle bacilli. Cholesterol content was 83 mgm. per cent, total lipids 575 mgm. per cent, and a cell block revealed no tumor cells. Following aspiration of fluid, air was introduced into the pericardial space and follow-up x-ray examination showed the pericardial membrane to be delicate *(Figure B)*. Several pericardial taps were performed until the cavity was relatively dry. However, fluid rapidly reaccumulated and repeated aspirations were required during the next two months. On October 9, 1957, an exploration of the pericardial cavity with biopsy of the pericardium was done. The pericardium was observed to be involved in a generalized chronic inflammatory reaction, manifested by a grayish appearance of the pericardial surface and mild thickening of the membrane. No localized lesion was found in the pericardium or mediastinum, and the epicardial surface was seen to be normal in appearance. Microscopic examination of the biopsy specimen showed a nonspecific inflammatory reaction.

Following operation the pericardial effusion again rapidly reaccumulated and it was necessary to perform a paracentesis at intervals of every three weeks in order to prevent cardiac tamponade. Over a period of time the character of the pericardial fluid changed in appearance from chocolate to grayish white. The amounts of exudate obtained at the time of aspiration averaged 800 cc. Serial chest x-rays showed only changes of pericardial effusion, no mediastinal or pulmonary lesions being seen at any time. Many diagnostic maneuvers were employed in an effort to demonstrate the etiological agent responsible for this patient's disease and none was found. Because of the fact that the character of the pericardial fluid suggested chyle, an unsuccessful attempt to demonstrate the presence of a chylous fistula by means of a radioactive fat uptake study was carried out. Fat tagged with I 131 was administered to the patient and serial determinations of radioactivity were made on the patient's serum and pericardial fluid. These studies

Figure B. Chest X-ray following pericardial paracentesis with replacement of fluid by air. Note the normal sized heart, air fluid level and delicate pericardial membrane.

failed to reveal any significant difference in the uptake of radioactivity in the pericardial fluid when compared with the serum. During November and December of 1957 the patient was given therapeutic doses of adrenal cortical steroids without beneficial result.

Pericardiectomy Performed

It was decided that if the patient showed no improvement after a year of observation and nonspecific treatment, operation should be recommended. Since no decrease in the rate of fluid formation had been observed, she was advised to undergo pericardiectomy, and this procedure was carried out on July 19, 1958. Subtotal excision of the pericardium was accomplished through a transverse bilateral thoracotomy incision which provided excellent exposure. At operation the pericardium was found to be only slightly more thickened than it had been previously, measuring approximately 5.0 mm. However, the entire epicardial surface had changed considerably in appearance and had obviously undergone early fibrotic change, although no myocardial atrophy was apparent. Again, microscopic examination of the pericardium failed to reveal any specific pathologic changes. The patient made an uneventful recovery from operation and was able to resume full activity within a period of four weeks. Follow-up examinations revealed a small pleural effusion in the left side of the chest which rapidly reabsorbed *(Figure C)*, and the postoperative electrocardiogram was entirely normal. Eight months following surgery the patient has no subjective or objective evidence of cardiac disability.

The Fluid's Nature

This case is a typical example of chronic nonspecific pericarditis with effusion in that the onset of her disease was insidious and its progression was slow without any significant disability so long as the degree of effusion was controlled. The diagnosis of pericarditis was readily apparent, but a definite etiologic diagnosis was elusive. The character of the pericardial fluid deserves some comment. With the exception of the first several taps, the fluid was a grayish white color and over a period of time its protein content gradually increased. These facts led to the conclusion that the inflammatory reaction had become self perpetuating, despite the possibility that the original inciting agent had disappeared many months previously. The milky color of the fluid prompted most observers who saw it for the first time to comment that the patient must have a chylous fistula, hence the vigorous diagnostic effort to demonstrate this lesion. Happily such was not the case and the prognosis was accordingly improved. Of primary significance was the development of fibrotic epicardial changes during the interval between the two operations. No doubt, had this process been allowed to proceed unarrested, constrictive changes and myocardial atrophy would have resulted, with the usual attendant disability.

Because of the relatively low incidence of this disease, experience with its treatment is necessarily limited, and present day concepts have been slow to evolve. Barker and Johnston in 1950 described three patients with long standing pericardial effusions, all of whom were operated on late, with poor results. The malignant course of tuberculous pericarditis long ago forced thoracic surgeons into the concept of radical pericardiectomy, although at first this procedure was undertaken only when constrictive pericardial changes were demonstrable and the underlying disease was considered to be quiescent. After effective antituberculous chemotherapy became available, Holman and Willett in 1951 described two patients in whom subtotal pericardiectomy was carried out during the acute exudative stage of tuberculous pericarditis with effusion. Good results were obtained in both of these cases. This approach was subsequently applied to the problem of nonspecific pericarditis and in 1953 Yu, *et al.* described a patient with long standing pericardial effusion who was subjected to radical pericardiectomy with good postoperative result. In 1954 Williams and Soutter described an operation involving pericardial biopsy with creation of a pleuropericardial window to allow drainage of pericardial fluid into the left pleural space. Good recovery was observed in three patients with chronic nonspecific

Figure C. Chest X-ray taken four months after pericardiectomy showing normal sized heart shadow.

pericarditis so treated. Proudfit and Elfer likewise reported satisfactory results in five cases of hemorrhagic pericarditis treated in this manner. Mannix and Dennis in 1953 described three patients with nonspecific pericardial effusions treated by extensive pericardial resection, all of whom did well. Shumacker and Harris added two more cases of this disease managed successfully with subtotal pericardiectomy.

Why Perform Subtotal Pericardiectomy

In the present case a pleuro-pericardial window purposely was not created at the first operation, because this procedure was performed for diagnostic purposes only. In addition it seemed desirable to avoid contaminating the pleural space, because of the uncertainty with respect to the etiology of the underlying disease. The decision to perform a subtotal pericardiectomy at the second operation was based on the following reasons:

1. The patient had failed to respond to 12 months of nonspecific treatment with periodic taps and cortical steroids.
2. It seemed apparent that the inflammatory process had become self perpetuating, and, despite reported good results with creation of a pleuro-pericardial window, complete removal of the secreting membranous surface seemed to offer a more definitive approach. Subsequent occlusion of a pericardial window by the adjacent lung was considered to be a real possibility.
3. Using a bilateral surgical approach, extensive pericardiectomy is technically quite feasible. The entire epicardial surface of the heart can be visualized and any serious fibrotic complications can be successfully managed.
4. The major portion of the disease is eliminated and the development of potentially disabling constrictive pericarditis, fibrosing epicarditis and myocardial atrophy is prevented.

415 West Second
Hutchinson, Kansas

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Medical Mobilization for the Future

A Look at the Demands on Medicine In Case of Another World War

COL. JOSEPH T. CAPLES, M.C., ***Ft. Leavenworth***

I HAVE BEEN ASKED to talk to you about "Medical Mobilization for the Future." Nothing that I am going to say is classified, it has all appeared in *Life* or *Time* or some other news media. A good deal of what I will say about wars in the future is speculation. It is speculation by people who know considerable about our capabilities and other people's capabilities, but it is still speculation and not doctrine nor the official policy of the Army.

A Look at the Past

Now—in order to discuss the future we should know something about what has happened in the past. The military past of the Medical Service as, indeed, of the United States Army as a whole, usually starts with the battle of Bunker Hill. Here, as in so many other wars, the patriots rushed out to fight without thinking of all of the implications of fighting. There was no provision for a Medical Service of any kind, the philosophy being that one either got killed or came through unscratched. The leading surgeon of Boston was Dr. Warren and he was killed there while serving as a Major General of the Line.

The wounded made their way back to Boston and lay in door ways and alleys as they had no other place to go. This upset the good burghers and led to the establishment of the Military Hospital, the first medical installation that belonged to the goverment of the colonies. The Medical Service of the Army that then developed for the war of the Revolution made a distinction between regimental or camp medical service and Hospital Service. A distinction that plagues us to this day. The regiments were served by regimental surgeons and surgeons' mates. They were usually procured by the colonel and they had no military rank at all. In the field they ran small regimental hospitals in tents or huts. What went to the Hospitals was usually smallpox or prolonged illnesses. The wounded died of their wounds or recovered in the field.

With the end of the war of the Revolution the army was disbanded. At one time there were only 84 men altogether and these were divided between West Point and Fort Pitt, which were arsenals.

With the approach of the war with England, the Army was enlarged but there was no change in the organization of the Medical Service. Nothing new in the way of medical service came out of it or after it, the Army again was reduced to small units serving in widely disbursed posts. Fort Leavenworth, established in 1827, was one of the frontier outposts constructed on the boundary of the forest and the plain.

Civil War Worries

The Civil War started out in the same pattern of medical service with the difference that Medical Officers were now commissioned by the same authority that commissioned line officers, either the state or the United States. There were also Hospital Stewards who were noncommissioned officers and there was a standard Medical Chest. All Medical Officers and Stewards were volunteers. There was no organized system of evacuation or hospitalization and even though there were two ambulances to a regiment, these were under control of the Adjutant and were usually in use for picnics or to take officers to town.

A great figure of military medicine came to the fore in the Army of the Potomac. He was Surgeon Jonathan Letterman and his first great stride forward was to obtain troops under Medical Department control to man the ambulances, the first such body of troops in American history. With his ambulance companies he organized the medical evacuation service of the Union Army. As his guide he had the work of Larrey who, as Surgeon to the Garde Imperial of the first Napoleon had organized a system of "Ambulances Volante" to tend the wounded after a battle.

After Letterman had established his evacuation means he then organized and established a series of "General Hospitals" to which the wounded were brought. In these hospitals the physicians and Hospital Stewards were persons in the military service. However the great bulk of the personnel were civilian employees but these Letterman put in uniform and trained as if they were soldiers.

A peculiarity of medical service in the Civil War was the Ambulance Boats which were fitted out by the governors of various States and which came along

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Presented before the Shawnee County Medical Society at its regular meeting on November 2, 1959. The opinions expressed in this article are those of the author and do not necessarily reflect those of the Army.

rivers or the sea coast and picked up soldiers from the originating State who were sick or wounded and took them back to their home States. This they did without references to the medical authorities as to the desirability of transporting some of the injured. One writer said that these ships were crowded with the malingerers and the fakes while the real sick and wounded were left behind.

On arrival in their home States, if any physician would certify that they were unfit, these heroes received an honorable discharge.

This again is an example of an old principle that the United States wins wars, but God only knows how we do it.

There was a rather good medical service in the Confederate Army but I don't want to discuss it at this time.

When the Civil War ended the Army again disbanded and the carefully constructed support services were completely dispersed. For the long haul leading down to the Spanish War through the Indian Campaigns the Medical Service of the Army consisted of either commissioned Surgeon and enlisted Hospital Stewards with the troops or Contract Surgeons in the more civilized posts. There were no other enlisted men in the medical service and cooks and ward attendants were furnished by roster of the line companies, just like any other fatigue detail. Going to the hospital was not popular and was resisted by regular soldiers as it is to this day.

Medical Department Established

In 1887 a Hospital Corps was finally established and soldiers could be enlisted directly in the Medical Department.

The Spanish War was short and far from brilliant from a staff and supply standpoint. There were less than 2,000 wounded in the whole war. The medical personnel, as were all the rest of the augmentary troops, were National Guard or Volunteers. They did the best they could with what they had but they had little. The principal cause of disability were the enteric diseases with Malaria a close second. The principal usefulness of this war was to point up the shortcomings of the military organization and lead to a general revision of our staff departments and a complete overhaul of our school systems under the leadership of Elihu Root as Secretary of War. It should also be noted that the Chief of Staff of the Army under President Theodore Roosevelt was General Leonard Wood, a physician who had graduated from Harvard Medical School and had served as a Medical Officer of the Regular Army for many years, winning the Congressional Medal of Honor for services against hostile Indians.

At the outbreak of the Spanish War he had transferred to the Cavalry as a full colonel and commanded the regiment of which Theodore Roosevelt was Lieutenant Colonel.

In this interim period between the Spanish War and World War I, it is interesting to note that civilian physicians decided that war was here to stay and began to plan how best they could serve their country in time of war. This led, in 1909, to the establishment of the Medical Reserve Corps which, in 1912, got the Medical Field Service and Correspondence School started as a part of the Staff School at Fort Leavenworth where it remained until transferred to Carlisle Barracks at the end of the first World War.

With the outbreak of World War I there were well established plans for the enlargement of the Medical Department. Types of hospitals had been established and the number of personnel necessary to staff them had been determined. In this war it became necessary for the first time in our history to draft men to be soldiers. However, the Officer Corps and especially the Medical Department was completely volunteer, many of whom had participated in some military training or indoctrination before putting on the uniform.

The number of men involved in this war was quite large but the principals of organization were sound. The difficulties arose from shortage of supplies, lack of coordination of shipments and the habit of Medical Officers of crying "Red Tape" when in truth they were simply ignorant of any administration.

After this war and before World War II, there was still considerable interest by civilian physicians in things military and many leaders of the civilian medical profession were advisors to the Surgeon General. The vacancies in National Guard and Reserve Units were usually quickly filled. There were many more applicants for the Regular Army than the Regular Army could take. Institutional interest was kept up by "Affiliated Units" in which all positions were filled by the staff of a particular hospital or university.

We had a good year to mobilize before we actually had to start shooting in that war and were in fair shape when Pearl Harbor was bombed. Many of you served in that war and in its little indefinite brother in Korea and I am not going to talk about it.

What About the Future

This leads us to an inquiry as to: What will the war of the future be like?

There are two schools of thought. One extreme is the "perhaps it won't be Atomic" and the other the Air Force concept of, "bang, you're dead in 30 days."

There may, of course, be little wars in which the participants can get just as dead as they can in an

atomic war of major proportions. Also, in these so-called "Brush Fire Wars" it is generally agreed that atomic weapons of some size will be used.

This leads us into the organization of the Army for the war of the future. Whether this war be small and deadly or large and deadly, the Army has adopted a new type of division called the "Pentomic Division" in which the three infantry regiments of the World War II division are replaced by five organizations of combined arms called "Battle Groups." These fight in widely dispersed formations in which being surrounded is a normal battle formation and where there is no longer a battle line but only a "battle area." These battle groups have a rather larger medical capability than the old infantry regiment and the division has a small medical battalion with a stout clearing company but in general, it is felt that medical service will be like that of an airborne unit in an air head where most of the casualties will have to be flown out. It is expected that this will be done by the new long range helicopters coming into use and that these will bring supplies and take out patients on the back haul.

Where Choppers Take the Wounded

Where do they take these patients? Either to an air strip where the patients can be transshipped to fixed wing aircraft or direct to General Hospitals in the Army Zone.

The types of non-divisional medical units that are planned are two. First, a field hospital of three platoons each being capable of operating as an independent 100-bed unit or as a combined group, and the General Hospital of 1,000 beds. It is felt that these two types can give the flexibility necessary in medical operations. A platoon can be detached for support of any type of effort whether forward or to the rear, and the general hospitals can be organized in hospital centers and designated as specialized hospitals with a minimum of organizational change.

There is a change in concept of the treatment of wounded. We know that once a man has passed to the rear of the division and is no longer cared for by people who wear the same shoulder patch or totem he becomes a hero and is resistant to return to the combat area. Therefore, in the widely dispersed battle field the wounded man will be kept as far forward as possible and may even be returned to his unit to convalesce.

Now, suppose the war starts as a big war with a coordinated thermo-nuclear attack against a number of United States Cities. I somehow feel that there will be all of the mistakes made that can possibly be made by both sides and the result will not be what the Operations Staff on either side had planned.

If It Should Hit Topeka

Let's take Topeka as an example and postulate that it is a prime target in the Russian target folders. I can believe that the Russian gunner might have had a hard night the night before and is a fraction of a mil off in setting his sights and the bomb misses Topeka entirely and hits Bazine, Kansas, squarely on the nose. We hope no one has dear friends in Bazine. Then one of the rockets satellited around Forbes Air Force Base rears up to counter-attack Moscow but it malfunctions and falls to the ground on take-off.

Looks like zero to zero at the end of the first inning as far as Topeka is concerned. But this is a sneaky type of war and let's redevelop a situation which occurred in the Marshall Islands when a bomb gave an unexpectedly large bang.

Omaha got socked with its bomb, right on the nose. What happens to its atomic cloud? It drifts down the prevailing winds and about half an hour later is spilling fallout about 200 miles away.

So perhaps, even with our first good luck we should have given some thought to what will happen to us here in town in case the United States is attacked.

First, there are going to be an ungodly number of people dead right now. So many that you can't compare it to any catastrophe you know. But these people are dead and there is nothing the medical profession can do for them. The civil authorities will have to bury them as rapidly as they can and how they can.

Secondly, what is going to be the mental attitude of the survivors? In this hot bed of head candlers I am not going to discuss this question.

Third, there are going to be an enormous amount of wounded of all types. Of these, radiation casualties will initially be a small percentage. The immediate problem will be burns, fractures, blast, crush, and lacerations. Much of these would be after a large non atomic disaster. The radiation casualties will show up later.

What are you physicians going to do? In the first place, you will probably all be drafted into the Public Service by the city or the state to provide what service you can. Without an organization you are not going to be effective. In fact, you will be most ineffective. This has been foreseen and there is in existence a Civil Defense Service. In Kansas, this organization has prepared an excellent plan called: Preliminary Operational Survival Plan; and the part that interests you is: Annex N, "Health Services" dated November 1957.

This plan establishes the structure of medical and other types of relief units. There is only one thing I can find wrong with it and that is that no one has joined as a volunteer reservist.

Don't forget that to have an efficient hospital you must have cooks, truck drivers, orderlies. The physi-

cians by themselves can do little. You must have an organization.

What then should the individual physician do now on the second day of November 1959? He should either join one of the reserve components of the Armed Services and budget some time to it as he does to church or service organizations, or he should find his place in the Civil Defense setup and budget some time to it. By belonging to the Civil Defense you may be able effectively to help your neighbor in some other community in case of civil disaster.

In addition to all these, in fact above all these, I urge you to take a brisk interest in the Foreign Policy of the United States and in the staffing and funding of the Department of State of the United States, for here is really the first line of defense. If they are superior in caliber of personnel and function as a foreign office should, you should have no reason to treat atomic casualties. Especially if State is backed by a reserve of the military large enough to stop any resort to force on the part of the opposition.

Medical Department
Fort Leavenworth
Leavenworth, Kansas

Medical History of War Offered

Many of the medical lessons learned during World War I had to be relearned under fire during World War II because of paucity of distribution of the World War I medical history.

Lieutenant General Leonard D. Heaton, The Army Surgeon General in an endeavor to prevent this costly relearning process, in the unhappy event of another war, has directed the preparation, publication, and distribution of the "History of the Medical Department, United States Army, in World War II." General Heaton is particularly anxious that information of the existence and availability of this History be circulated widely among the profession, both military and civilian.

Of the 48 volumes programmed for the series, 15 have been published and can be purchased at modest cost from The Superintendent of Documents, Government Printing Office, Washington 25, D. C. The set of 15 volumes may be purchased for $66.50 or individual volumes can be obtained at remarkably low prices. Commanding officers of medical units may requisition copies for their Medical Units libraries by submitting DA Form 17 directly to The Historical Unit, U. S. Army Medical Service, Washington 12, D. C., ATTN: Promotion Branch.

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Dioctyl Sodium Sulfosuccinate

Serum Lipid and Protein Levels During Its Use for Constipation

SAMUEL ZELMAN, M.D.; CHI CHE WANG, Ph.D.; *and* I. APPELHANZ, B.S., *Topeka*

Because intravenous detergents have been shown experimentally to cause rises in serum lipids and lipoproteins, the oral use of dioctyl sodium sulfosuccinate, commonly used in the treatment of constipation, was followed in 49 patients by serum lipid and protein studies. Though small mean differences in the expected directions were obtained after treatment, these were statistically insignificant.

It is concluded that oral administration of therapeutic doses of dioctyl sodium sulfosuccinate for constipation does not significantly affect serum lipid or protein levels.

Since its introduction in 1955 by Wilson and Dickinson,[1] the oral administration of a detergent agent to cause fecal softening has become widespread practice, both in and out of hospitals. The surface acting agent most commonly used, dioctyl sodium sulfosuccinate, is presumably not absorbed and not toxic. The possibility remains, however, that small quantities of that agent may be absorbed into the bloodstream and there produce some of the effects which have been reported following experimental injection of such agents.

Elevations of blood cholesterol, phospholipids, and neutral fat have followed intravenous injection of detergent substances into rabbits,[2] rats,[3] and mice.[4] These rises in plasma lipids have been sustained and cumulative when repeated injections or long-acting agents were used.[2] The detergent action of accumulated bile acids in blood has been held accountable for the increased serum lipid levels found clinically in patients with biliary obstruction.[5] An increased formation of lipoprotein complexes in the serum is associated with these higher blood lipid levels,[6] interfering with the normal exchange of lipids between plasma and liver.[7]

Experimental oral administration of detergent in mice was reported to be ineffective in producing a detectable level of detergent in the blood or in increasing the blood lipids.[4] Nevertheless, in view of the present widespread clinical use of oral detergent, it seemed advisable to investigate the possibility of serum lipid changes in patients receiving such medication.

Method

Forty-six hospitalized patients, most of whom required the use of some aid to bowel movement, were given dioctyl sodium sulfosuccinate in a divided daily dose of 360 mg. for a period of one week. Serum lipid and protein determinations were made in duplicate on each patient immediately before beginning treatment and again after one week before discontinuing its use. The serum total lipids were determined by the turbidimetric technique of Kunkel.[8] The serum cholesterol and its esterified fraction were determined according to the method of Zak, *et al.*[9] The serum phospholipids were determined by a modification of the Youngburg technique,[10] using Gomori's method for the determination of inorganic phosphorus.[11] The total proteins of the serum were determined by the micro-Kjeldahl method detailed by Koch and McMeekin,[12] modified by diluting the serum 1:50 and titrating the distillate against 0.01 N acid instead of Nesslerization. The serum proteins were fractionated by paper electrophoresis according to the procedure described by Durrum,[13] using the Spinco model R paper electrophoresis cell and photoelectric scanner.

Three patients were given the same daily dose of dioctyl sodium sulfosuccinate for a consecutive period of 12 weeks, before and during which time the serum total lipid, total and esterified cholesterol, phospholipid, and the serum protein paper electrophoretic curve were determined weekly.

From the Medical Service and Research Laboratory, Veterans Administration Hospital, Topeka, Kansas.

TABLE 1

SERUM LIPIDS AND PROTEINS BEFORE AND AFTER ONE WEEK OF DIOCTYL SODIUM SULFOSUCCINATE 360 MG. DAILY

	Mean Values			*Total*	*Significance*	
	BEFORE	AFTER	DIFF.	*Cases*	t	PROB.
Total Lipids mg. %	792.4	804.0	11.6	41	0.67	.50-.60
Phospholipids mg. %	233.9	240.8	6.9	41	0.81	.40-.50
Total Cholesterol mg. %	235.4	241.0	5.6	36	0.66	.50-.60
% Esterified	66.4	65.7	– 0.7	41	– 0.48	.60-.70
Total Proteins Gm. %	6.86	6.68	– 0.18	45	–1.68	.05-.10
% Albumin	45.5	46.0	0.4*	45	0.55	.50-.60
% Alpha-1 Globulin	5.0	5.2	0.3*	45	0.99	.30-.40
% Alpha-2 Globulin	12.5	12.9	0.3*	45	0.87	.30-.40
% Beta Globulin	16.0	16.2	0.2	45	0.50	.60-.70
% Gamma Globulin	21.0	19.7	– 1.3	45	– 0.31	.70-.80

* slight discrepancy due to rounding of terminal digits

Results

The mean values of serum total lipids, phospholipids, and total cholesterol were higher after treatment than before, and the mean serum alpha and beta globulin fractions were increased at the expense of the gamma globulin fraction. These changes were all in the direction to be expected if affected by detergent in the serum. However, the differences were small, and statistically insignificant *(Table 1)*.

The three patients followed over a period of 12 weeks also failed to show significant changes as a result of treatment.

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Liposarcoma of Thigh

Edited by JOHN D. WARKENTIN, M.D.

Dr. Boley (Moderator): The case for presentation illustrates the unexpected occurrence of malignancy in a tumor which pre-operatively was considered to be benign.

Mr. Barnett, will you please tell us this patient's story?

Mr. Barnett: The patient is a 55-year-old, obese, white woman. She was first seen in the out-patient clinic three weeks ago complaining of a small, firm, painful lump on the medial aspect of her left thigh which was tender when the opposite thigh rubbed against it. She had first noticed this lump only on the previous day. In addition, about two months earlier she had first noticed small, soft, non-tender subcutaneous lumps in her back. These had apparently not increased in size. She had consulted her physician about them and was told that they were lipomas and that she should not worry about them. The remainder of the history was noncontributory.

The patient was five feet tall and weighed 180 pounds. This obesity made adequate palpation of the subcutaneous masses and the inguinal lymph nodes difficult. The subcutaneous lumps in her back were soft, indefinite in outline and nontender. Two were palpable on the left along the posterior axillary line, and one on the right. The largest measured about 15 centimeters in diameter. The lump in the thigh was also subcutaneous. It did not elevate the overlying skin, which was freely movable over it. It formed a definite, smooth, rounded mass, however, which was firm, slightly tender and variably painful; the overlying skin was not hot. The tumor measured about three cm. in diameter. No inguinal lymph nodes could be palpated. The remainder of the physical examination, apart from the obesity, was within normal limits. There were no xanthomas of the skin, and there was no evidence of neural involvement by any of these subcutaneous masses.

Dr. Boley: Then how do you account for the pain that this patient complained of?

Dr. Dressler: I have no good explanation for it. I doubt that the lump was really painful and believe that what she was describing was probably the tenderness she felt when the opposite thigh rubbed against the mass.

A Student: What is the cause of the pain in lipoma dolorosa?

Dr. Boley: The cause of the pain in this condition remains unknown. These lipomas do not have any demonstrable relationship to nerves which could be incriminated as the cause of the pain. Multiple painful lipomas must be differentiated from adiposis dolorosa or Dercum's disease, which is characterized by painful, but non-neoplastic, deposition of symmetrical masses of fat in various parts. Dr. Dressler, what was your impression of the thigh tumor when you first saw the patient?

Dr. Dressler: The difficulty in evaluating this tumor because of the patient's obesity has already been mentioned. We thought that this lump was a simple lipoma in spite of its moderate firmness. We excised the mass in the out-patient department. It did not appear encapsulated, and we could see no septation or trabeculae.

Dr. Boley: The gross specimen we received in the laboratory was a roughly rectangular piece of yellow adipose tissure measuring 3 x 2 x 1.5 cm. When we cut through it we found a central stellate, firmer, grayish-white area. Microscopically, with a low-power lens, one sees a mass of adipose tissue traversed by radiating, more cellular fibrous septa which are larger and more prominent in the central portion *(Figure 1)*. The septa become much more narrow and fine near the periphery of the mass.

A number of lesions have this general appearance when viewed under low magnification. Weber-Chris-

Figure 1. Radiating, cellular, fibrous septa embedded in a mass of adipose tissue. Hematoxylin and eosin. ×20.

tian disease or relapsing, febrile, nodular, non-suppurative panniculitis is characterized by firm, tender nodules and may have this low-power histologic appearance; however, the nodules are multiple, and under the high power there are large, prominent, histiocytic foam-cells and, in the early stage, many inflammatory cells. Erythema nodosum involves predominantly the fibrous septa in the subcutaneous tissue and so may also have this general pattern. It consists of a chronic granulomatous inflammation accompanied by a variable vasculitis. It, too, forms multiple red nodules, most commonly on the shins. Erythema induratum might also be considered, but this lesion is more commonly found in the lower legs, lies immediately beneath the dermis and has a much more dense inflammatory infiltrate with areas of caseation.

On examining the present lesion under higher magnification, we can rule out all of these conditions. The septa contain numerous spindle-shaped cells lying in a haphazard arrangement. In addition, there are cells with large, hyperchromatic, smudgy nuclei, and some multinucleated cells *(Figure 2)*. Some of these cells have foamy or vacuolated cytoplasm suggesting that they are lipoblasts. They intermingle with a few inflammatory cells and infiltrate outward from the septa into the adjacent adipose tissue. Occasional cells are in mitosis. The histologic appearance is one of patternless proliferation, and not a reaction to injury. These features have led us to the diagnosis of liposarcoma.

Dr. Kepes: Dr. Boley, do you believe that the large fat cells have been formed by the liposarcoma or were they pre-existent? In other words, might this mass originally have been a lipoma, the center of which has undergone a malignant change?

Dr. Boley: Yes, I believe this tumor originally was a lipoma and that the large fat cells are not the product of the malignant tumor. Grossly, this tumor was not uniformily bright yellow as lipomas usually are, but had a whitish appearance which has been called lipoma myxomatoides by Ewing. Whenever a supposed lipoma has this whitish, opaque, edematous appearance, one should think of low-grade liposarcoma. Sometimes this gross appearance is due to an increase in fibrous tissue and vascularity in a benign lipoma, but when mitoses and these large, hyperchromatic, smudgy nuclei are seen microscopically, liposarcoma becomes a strong probability.

A Student: Is there any increased incidence of lipomas and liposarcomas in obese patients?

Dr. Boley: I don't know.

A Student: How likely is this patient to have

(Continued on page 615)

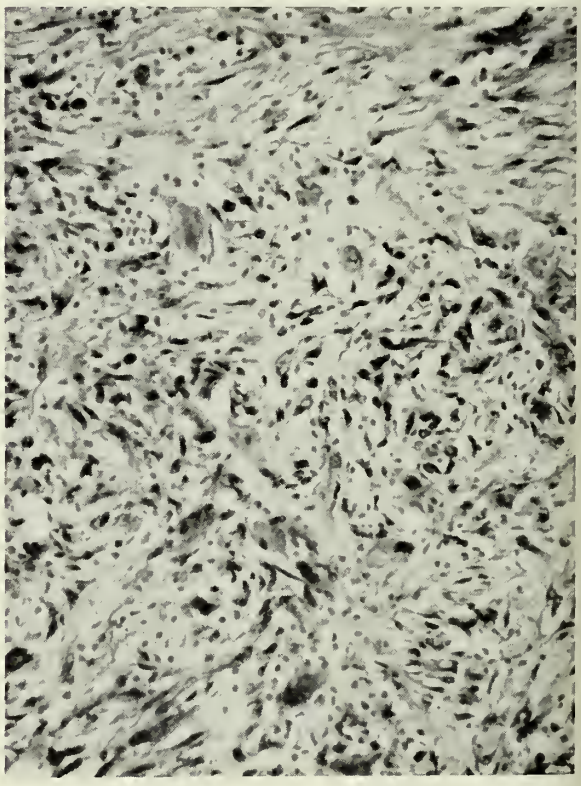

Figure 2. The septa contain patternless fusiform cells and large, sometimes vacuolated cells with dark-staining, irregular, smudgy nuclei. A few inflammatory cells are diffusely interspersed. Hematoxylin and eosin. ×250.

Student
THESIS

The Hippocratic Oath; Its Background, Origins and Partial History

SANDRA KELLER DAUGHERTY, M.D., ***Houston***

Introduction

". . . UNTIL THERE ROSE AMONG them Hippocrates, the son of Heraclides, who is known as Hippocrates the Great, of widespread name and famous for his excellence."* It matters little whether Hippocrates composed all of the works that have been recorded in his name, or indeed whether the *Oath*, which bears his name and is the subject of this paper, was by his authorship. What is important is that there existed and continues to exist to this day a concept known as "Hippocratic Medicine," the spirit of which is caught up and embodied within the words of the *Hippocratic Oath*.

According to Ibn Jamī, prior to the time of Hippocrates, the art of medicine was on the decline, for the Asclepiads kept their art within the confines of their families, and they had too few heirs to keep the art alive. When Hippocrates realized this, he decided to open the doors of medicine to promising young men of good character, so that the art would thrive and its practices be spread over the civilized earth.

"As he felt, however, that he would be guilty of a crime and liable to slander by deviating from the hereditary principle and by transferring the art (of

HIPPOCRATIC OATH

I swear by Apollo the physician, by Aesculapius, Hygeia, and Panacea, and I take to witness all the gods, all the goddesses, to keep according to my ability and my judgment the following Oath:

To consider dear to me as my parents him who taught me this art; to live in common with him and if necessary to share my goods with him; to look upon his children as my own brothers, to teach them this art if they so desire without fee or written promise; to impart to my sons and the sons of the master who taught me and the disciples who have enrolled themselves and have agreed to the rules of the profession, but to these alone, the precepts and the instruction.

I will prescribe regimen for the good of my patients according to my ability and my judgment and never do harm to anyone. To please no one will I prescribe a deadly drug, nor give advice which may cause his death. Nor will I give a woman a pessary to procure abortion. But I will preserve the purity of my life and my art.

I will not cut for stone, even for patients in whom the disease is manifest; I will leave this operation to be performed by practitioners (specialists in this art).

In every house where I come I will enter only for the good of my patients, keeping myself far from all intentional ill-doing and all seduction, and especially from the pleasures of love with women or with men, be they free or slaves.

All that may come to my knowledge in the exercise of my profession or outside of my profession or in daily commerce with men, which ought not to be spread abroad, I will keep secret and will never reveal. If I keep this oath faithfully, may I enjoy my life and practice my art, respected by all men and in all times; but if I swerve from it or violate it, may the reverse be my lot.

This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be best by the faculty at the school. Dr. Daugherty is now at the Jefferson Davis Hospital in Houston, Texas.

* These simple words are taken from Max Meyerhoff's English translation of the Arabic treatise by Ibn Jamī, "An epistle to Saladin on the Revival of the Art of Healing." Sultan Saladin reigned over Egypt and Syria from 1171 to 1193 A.D. Ibn Jamī was one of the most prominent physicians of his court.

medicine) to public teaching, he endeavored to substitute teachers for the fathers, disciples for the sons, and the art itself for the kinship between them, and he imposed on the students an oath to ensure that the professional connection between teacher and student should correspond to the original connection of kinship and heritage."

In order to understand the *Hippocratic Oath* and its origins, we must first learn something of the philosophy of Ancient Greek Medicine and of the era in which Hippocrates lived. Little is known of the life of Hippocrates. He lived during the 5th and 6th centuries B.C. The history of the origin of the *Oath* that Ibn Jamī gives us, as quoted above, was written 1500 years after Hippocrates lived, and it is not presented here as fact. Although the same history is repeated often by other Arabian historians, it most probably is merely a popular "folk" story.

What Is Fact and Fancy?

It is difficult to separate fact from myth about Hippocrates. It is known that he was a disciple of the Coan school of medicine, as opposed to its contemporary rival, the school at Cnidus. According to Major, Hippocrates, living in the Golden Age of Greece, had as his contemporaries, "Pericles, the statesman; the philosophers, Socrates, Plato, Aristotle, Xenophon, and Protagoras; the dramatists Aeschylus, Sophocles, Euripides, and Aristophanes; the poet Pindar; the historians Herodotus and Thucydides; the sculptors Phidias, Praxiteles and Polygnotus." Much that is attributed to him is contradictory, but this in no way detracts from his legendary greatness. His work and philosophy were well known and respected for their excellence by his learned contemporaries, and he was regarded by them as the greatest authority of the age.

That so many varied interpretations of his work and philosophy were developed by his contemporaries and by succeeding generations is attributed by Heidel to the fact that Hippocrates, like Jesus, influenced men through his oral teachings, which were ". . . ethical and religious and capable of varying interpretations." Even if we allow that all of his teachings were in oral form only and he never recorded a single view by his own hand, certainly the literature of his day reflected his great mind. Again, quoting from Heidel:

"If we cannot identify a single extant treatise in the Hippocratic corpus as certainly written by Hippocrates, we cannot with certainty attribute any one of them to any other author, and concerning the writers from whose works well-authenticated extracts have been preserved, it is fair to say that, except for those who stand close to Aristotle, differences between their distinctive doctrines were trivial in comparison with the points of view common to all. Littré was clearly right in asserting that the more closely one studies the Hippocratic treatises the more one recognizes that they all present a level of knowledge almost the same and conceptions of the living body and its diseases very much alike."

The Hippocratics were a deeply moralistic group. They not only listened carefully to their patients' complaints and developed definite pictures of disease from their stories, but were bound to treat their patients in all sincerity and to the best of their ability. They were the farthest opposite to Charlatans that the world has known. Intellectually, they belonged to the greatest minds of 5th century Greek society. Edelstein believes that the development of Greek philosophy had a profound influence upon Greek medicine. The use of medical examples and references to the human body served as a vehicle for the education of the public in the concepts of philosophy, for much of medical knowledge was common knowledge to the public, and therefore it was convenient for philosophers to use medical analogies. This is not to say that all physicians were merely craftsmen and possessed knowledge to which the public had easy access, but there were a few "ingenious and subtle" physicians who were philosophers first and physicians only because of their interest in the physiology and biology of man as a part of the great system of nature. In order to know man, one must first comprehend the laws of nature.

Thus far, this paper has been concerned with the philosophical background of Hippocratic medicine. The practical aspects and methods, and finally Hippocratic ethics as exemplified in the Hippocratic Oath remain to be discussed. These three categories, Hippocratic philosophy, methods and ethics are artificial, for the latter two must arise from the first. Only a word need be said about Hippocratic Methods in this paper.

The Methods

The age of Hippocrates was one of unparalled inquisitiveness into the nature of things, of investigation of opposites and determining why they were opposed. Although the Greeks generalized and hypothesized, necessarily generalizing as they went due to their lack of fundamental data obtainable only through experimentation, they were, in many ways, astute observers of phenomena. One of their main medical premises was to know each patient well, for they recognized that individual variation had an effect upon the progress of disease in each patient. They knew the outcome of various diseases because of careful observation and thought the rendering of prognosis an important task of the physician. This was part of the "art" of the practising physician. The art and

science of medicine were interdependent; the first was as important as the second, and if one were forsaken for the other, he was regarded as a narrow and inferior physician. The Hippocratics stressed the importance of the prophylaxis of disease by maintaining health with proper diet, exercise, etc. A disturbed balance of the body resulted in disease; therefore, to restore balance was to cure disease. They believed that disease was caused by an overbalance of a constituent, seldom to a paucity of one. The Hippocratic method of diagnosis was the following:

". . . Hippocrates, in making a diagnosis, took the patient's history, inquired carefully about his present illness, his past history, his family history, his habits, his work, where he lived, what he ate and drank, and then made a careful physical examination, employing inspection, palpation, and auscultation, following this with a careful examination of sputum, urine and stools."

Because physicians required that their patients put themselves entirely into their hands, forcing them to follow their prescribed diet and physical regimen, only the rich could afford to abandon their normal life activities and become preoccupied with their bodily functions and malfunctions. "Desiring health as they did, unhampered by any professional obligation, uninterested in being busy for the sake of being busy, the upper classes were free to live for their health, to indulge in the idolatry of the body endorsed by the physicians."

The Oath and Its Origins

"The ethics of the Classical period of Greek medicine were not the ethics of humanism as we know them, or indeed of the humanism which was present in Greek ethics only a few centuries later." The Greek physician felt that it was his duty to practice medicine well, and to give his patient the best diagnostic and therapeutic measures, not out of love for his fellow man, or "philanthropy," but because he felt it his duty to perform as close to perfect work as was humanly possible. It was not moral conscience that forbade him to practice poor medicine, but "the conscience of a good craftsman" which prevented him from corrupting the skill of his profession. There were no laws of malpractice. A physician could have practiced all manner of abuses and gone unpunished, were it not for this professional conscience. "His ethic consists in doing his task well, in perfecting his skill; it is an ethic of outward achievement rather than of inner intention." Morality had nothing to do with medicine. But a great change was to take place within the next few centuries. A movement which Edelstein believes began in the latter part of the 4th century, B.C., the time when the Hippocratic Oath was composed, and extended down to the time of Galen, was to add to the conscience of the perfecting and impersonal craftsman the moral attitudes of the humanist. "Through (this movement), the ethics of the medical craftsman were reshaped in accordance with the various systems of philosophy. The new standards characteristic of the second stage in the development of ancient medical ethics originated in a revaluation of the arts and crafts, and in the transformation of the medical craft into a scientific pursuit." The Pythagoreans, who composed a minority group, held moralistic attitudes toward their work, and indeed toward every aspect of their lives. Their greatly sought-after "good life" could be attained only through the application of moral law to all aspects of life. The evolution of humanism, if we begin with the Pythagoreans, extended down to the 2nd century A.D. when it was formulated ito the philosophy of late Stoicism, which ". . . in its new terms of human brotherhood, . . . foreshadow(ed) the categories of Christian medical ethics." During these five centuries of humanistic development and existence, only a minority of physicians adhered to and practiced the philosophy, for no medical institution taught its precepts and no law enforced its moralistic practices. As Edelstein states ". . . this very fact makes the achievement of the individuals who aspired to medical ethics all the more impressive . . . that they were willing to forego material advantage for the law of their own conscience; that they took the initiative in raising and clarifying the moral issue, thereby laying the foundation for all later medical ethics." It is only in the understanding of this movement, that the precepts as outlined in the *Oath* can be fully appreciated.

Two Sections of the Oath

It has long been known that the Hippocratic Oath contains two distinct sections; the first part, known as the covenant, is concerned with "the pupil's duties towards his teacher and his teacher's family and of the pupil's obligations in transmitting medical knowledge"; the second part is the "ethical code" and concerns the rules to be observed in the treatment of diseases. The ethical code includes the two clauses which forbid poisoning and abortion. Edelstein, in his paper on the *Oath,* believes that these are the basic beliefs (those against poisoning and abortion) underlying the whole program outlined in the Oath, and that by tracing these, the historical identification of the Oath's ethical precepts may be made.

The ethics of antiquity did not forbid suicide or abortion; quite to the contrary, it condoned both if the circumstances were suitable. Physicians felt justi-

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Most of the information in this paper on the ethics of Hippocratic medicine and the origins of the *Oath* is taken from publications by Ludwig Edelstein.

fied in advising suicide to their patients if they were plagued by intolerable pains and certain incurable diseases. Since the physician had the greatest knowledge of poisonous medications and knew which were the surest and least painful, it was natural that he should dispense the potion also. Suicide was actually legalized in some states if it could be shown that there was sufficient reason. Similarly, abortion was not censured, and infant exposure was often practiced. It is obvious then that although the *Oath* forbade these acts, not all physicians complied, for it was not considered to be a breach of medical ethics to take part in such activity. Thus far we have evidence that the law did not forbid abortion or suicide; what then, did religion advise? Since the religion of antiquity "did not include the dogma of an immortal soul," and there is no mention of punishment by their gods for such acts, it must be assumed that religion did not forbid abortion and suicide. Therefore, "law and religion left the physician free to do whatever seemed best to him."

If law and religion are not responsible for developing these ethical concepts, then all that is left is that they are the result of a definite philosophical system. This could not have originated with the Cynics or the Stoics, for they held that suicide was permissible for the diseased. Although Aristotle claimed that suicide was cowardly, and Epicurus felt that man was too noble to be subdued and beaten by mere illness, these were mere words and too weak an influence to have brought about such a definite statement against the commission of these acts as found in the Oath. And, besides, there was no threat of punishment implied in these philosophies when a follower disobeyed. Dr. Edelstein feels that these ethical concepts were Pythagorean in origin.

Pythagorean Influence

The Pythagoreans were a minority group of the 4th century B.C., and they held life a most precious possession. Suicide was considered despicable for it was "a sin against god who had allocated to man his position in life as a post to be held and to be defended." Certainly, such a philosophy could not condone abortion either. They held that it was man's duty to have children so that on death he would leave other worshipers of the gods to take his place. Unlike the Platonists and Stoics who believed that life did not begin until the moment of birth and consequently that abortion did not kill a living being, the Pythagoreans claimed that the life of the embryo began at the moment of conception. The penalty for committing such sins against the gods was severe and might even result in the loss of the offender's soul.

"When the physician, after having foresworn ever to give poison or abortive remedies, add(ed) 'In purity and holiness I will guard my life and my art' it (surely must have been) the purity and holiness of the 'Pythagorean way of life' to which he dedicated himself."

Thus far in discussing the ethical aspects of the *Oath,* we have been concerned with the specific prohibitions of abortion and suicide. The general rules of the ethical code, as Edelstein labels them, remain to be discussed. These are contained in that section of the *Oath* which deals with the ethics to be practiced when treating disease proper. Disease was treated by the judicious use of dietetics, pharmacology, and surgery. It is most interesting to note that the Pythagorean physicians placed the emphasis of treatment upon dietetics first, pharmacology second, and surgery last of all, just as they are listed in the *Oath.* In the statement, "I will apply dietetic measures for the benefit of the sick according to my ability and judgment; I will keep them from harm and injustice," Edelstein feels that the harm and injustice mentioned here is that which might result from the injury man inflicts upon himself. The Pythagoreans felt that all bodily appetites were characteristic of the soul, but were either created or acquired by man and so were to be guarded carefully, lest man overindulge in them. It is necessary therefore, in order not to overindulge and keep oneself "from harm and injustice," to choose one's foods and their quantity with caution and intelligence. It was their belief that the doctor was the person most qualified to make this choice. There is an element of preventive medicine here, for by not only prescribing a diet in disease, the physician must also prevent disease by seeing to it that the patient had a properly chosen diet in health. To give in to excessive appetite, was to create disease in the soul, as well as produce it in the body. In the Pythagorean sense, the physician ministered to both the soul and the body.

The pharmacological aspects of Pythagorean medicine have already been discussed under the section on abortion and suicide.

"I will not use the knife, not even on sufferers from stone, but will withdraw in favor of such men as are engaged in this work." The Pythagoreans valued surgeons less highly than did other physicians of their day; they felt that surgery was the lowest of the branches of medicine. This is in accord with their teachings and beliefs, as they felt that most diseases resulted from unreasonable living and therefore, were amenable to therapy by diet and medication, not through surgery. Surgery did not correct but ignored the cause of disease, for the removal of a part did not cure that part. They did allow others to perform surgery on their patients—this would seem a paradox. The Pythagoreans did not believe in a universal adoption of their philosophy by all people, for their dogma was suited to the higher functioning individ-

uals. They could still remain pure while referring their patients to the impure and "lower functioning" surgeons. They realized that surgery was of use in those cases where it had become too late to cure by the methods of dietetics and pharmacology. Why they would not perform the surgery themselves remains obscure.

"Whatever houses I may visit, I will come for the benefit of the sick, remaining free of all intentional injustice, of all mischief and in particular of sexual relations with both female and male persons, be they free or slaves." This unusual association of justice with sexual purity, Edelstein asserts, is again, peculiarly Pythagorean. "They alone judged sexual relations in terms of justice, meaning thereby not that which is forbidden or allowed by law: for the husband to be unfaithful to his wife was considered to be unjust toward her." In regard to whether injustice is prohibited toward both freeman and slaves, Pythagoreanism held that all men were equal and therefore deserving of equal justice.

"What I may see or hear in the course of the treatment or even outside of the treatment in regard to the life of men, which on no account one must spread abroad, I will keep to myself, holding such things shameful to be spoken about." Again there is an unusual and unexpected phrase in this portion of the *Oath:* the statement that not only will he keep silent about matters which come to his attention during the course of treatment, but also those with which he comes in contact outside of treatment. In other words, these physicians were closed mouthed about all matters. Most philosophies of the day specified that the physician be silent about matters which he learned of through professional contact with his patients. It is only in Pythagoreanism that so general a statement that he be silent in all matters is found: ". . . it insists on secrecy not as a precaution, but as a duty."

Again we must be reminded that the *Hippocratic Oath* is a small voice coming to us from the 4th century B.C. It represents a minority group of that age. Quoting from Edelstein:

"Far from being the expression of the common Greek attitude towards medicine or of the natural duties of the physician, the ethical code rather reflects opinions which were peculiarly those of a small and isolated group."

The Covenant

The covenant is that portion of the *Oath* which promises the student of medicine will regard his teacher as he would his parents, in that he will supply his monetary needs if his teacher is in need; he will teach his children the art of medicine, if they wish to learn it. He also promises that he will instruct his own children in the art, but will not divulge any medical secrets to anyone who has not signed the covenant and taken the oath. The Pythagoreans of the 4th century honored their teachers by adopting them as their own fathers. Important to the Pythagorean way of life was the fact that the son honored his parents above all others, and it was his duty by law to support them. So it was the pupil's duty to support his teacher, even to the extent that "he procured burial for him" according to Pythagorean beliefs. It follows that if the teacher was to be treated as the pupil's father, then the pupil should instruct the teacher's sons and regard them as his brothers. The Pythagoreans taught medicine to an exclusive group of students, *i.e.*, those within the family as discussed above, and those few outsiders who were carefully examined and found fit to enter the profession.

The reward of the ethical physician remains to be discussed. "If I fulfill this oath and do not violate it, may it be granted to me to enjoy life and art, being honored with fame among all men for all time to come; if I transgress it and swear falsely, may the opposite of all this be my lot." At first glance, this seems presumptuous on the part of the physician, but when we stop to think of the Greek ideal and belief in the attainment of eternal fame on earth, it is better understood. The Pythagoreans, in keeping with their time, also believed in the attainment of worldly fame which became eternal if the person had performed celebrated and noble deeds prior to death. This peroration is no more than the expression of a desire for eternal fame, through the performance of great medical deeds.

Granted the Pythagoreans were a minority group as far as their ethics were concerned, but they practiced the highest caliber of medicine, that which we call Hippocratic medicine. They were philosophers first, and physicians second, as were the Hippocratics. That the *Oath's* Pythagorean ethics, representative at first of only a relatively small group of 4th century B.C. men, was caught up in the body of Hippocratic literature in the course of succeeding centuries and thus became known as the ethical voice of Hippocratic medicine, is proof of its endurance and exceeding applicability to medicine of all ages.

History of the *Oath*

Ibn Jamī gives the following account of how Greek medicine was transmitted to the Arabs. Again the necessary vagueness which surrounds this transmission is emphasized, for Ibn Jamī lived 1500 years after most of the Hippocratic corpus had been written.

Under Hippocrates' teachings, the medical art flourished, but later it was destroyed by petty arguments and prejudices among physicians. It became a mass of superstitious practices and quackery until

600 years had passed and Galen appeared. Galen restored Hippocratic medicine and purified it of all the falsifications the previous 600 years had introduced into it. Again the medical art flourished.

Then, Ibn Jamī states, came the Christian kings whose faith forbade the study of intellectual subjects. They discouraged the study of medicine, and once more "medical learning fell into disorder and confusion." But again, the art is revived by Oribasius, who by avoiding the length and redundance of Hippocratic and Galenic compositions, popularized medical learning, writing medical books in the form of "compendia, manuals, summaries, and the like." Students of medicine again increased in number. But the prominent physicians of Alexandria, fearing that the true healing art as exemplified by the works of Hippocrates and Galen might become extinct, prevailed upon the kings to include in the medical curriculum, 20 books, 16 of Galen and four of Hippocrates. During the 8th century, the medical school at Alexandria was transferred to Antioch and Harran, where Greek manuscripts were more abundant. Still there were many to whom the short cuts to medical education appealed, and the summaries, compendiums, etc. became more popular than the originals, and there arose the "self-taught" practitioners who knew enough about medicine merely to pull the wool over the eyes of the public by their flattering tongues and easy treatments. Ibn Jamī calls these ignorant men, Charlatans and public menaces. He appealed to Sultan Saladin for a standard to be set whereby all practitioners must be subjected to an examination.

In the 9th century A.D., Arabian medicine and philosophy was further advanced through the efforts of the Caliph Abdallah who seized Greek manuscripts from the Byzantines and brought others from Asia Minor. He also founded in Baghdad, a translation school and library where more than 300 Greek works of medicine and philosophy were translated, so that by the end of the 9th century ". . . the Arabs were in possession of all that was of interest to them of Greek science, in good Arabic translation."

Other Areas of Preserving the Greek Way

This information implies that the Arabian centers were the only areas where Greek literature and knowledge were preserved and put to practical use. This is not true. During the 6th and 7th centuries A.D., all scholarly activity was forced to confine itself within the walls of the monasteries of Europe, due to the infiltration and destruction of the barbarian intruders. Medicine was no exception. The persistance of Hippocratic medicine and idealism through the Middle Ages was largely due to the preservation and translation of manuscripts within the monasteries. This was not only true of the late Middle Ages and pre-Renaissance, but was true of the early, so-called Dark Ages. The earliest known evidence of this is a letter written by St. Jerome to Nepotian, a priest in Northern Italy, in which he cautioned the priest ". . . to observe secrecy and chastity with regard to the household in which he visited the sick." In the same letter, he mentions Hippocrates and his practice of having his pupils take an oath which ". . . exacts from them silence, and prescribes for them their language, gait, dress and manners." This letter shows that there was a certain knowledge of Hippocratic ethics and etiquette during the 4th century A.D. MacKinney defends the ideals of the so-called Dark Ages, or early Middle Ages (400-1100 A.D.) as being largely Hippocratic, even though they are without the benefit of the great Salerno's influence.* During this period, two great philosophies met, those of Hippocratic and Christian idealism, and there emerged the era of "Monastic Medicine" which included the 8th through the 10th centuries A.D. This was truly a remarkable period in the history of medicine. As is popularly held, medicine with its long revered Hippocratic ethics was not subordinated to Christian ideals.

Salerno was the well-known center of Hippocratic idealism during the late Middle Ages. The manuscripts cited by MacKinney antidate the earliest examples of Salernitan literature, and he feels that the classicism of this earlier period was the result of translations made during the 5th, 6th, and 7th centuries in the monasteries of Byzantine, Italy, around Ravenna.

The medieval ideal of the physician was that he should have all the good qualities of man and no faults; he should have: ". . . discretion, taciturnity, patience, tranquillity and refinement; not greed but more of restraint and subtility, rationality, diligence, and dignity." What is more, his personality should be ". . . of a gracious and innately good character, apt and inclined to learn, sober and modest; a good conversationalist, charming, conscientious, intelligent, vigilant and affable, in all detailed affairs adept and skilful. Our art also required that one be amiable, humble and benevolent." He should not be ". . . hesitant or timid, turbulent or proud, scornful or lascivious, or garrulous, a publican, or a woman-lover, . . ." he should not be ". . . drunken or lewd, fraudulent, vulgar, criminal or disgraceful. . . ."

There is evidence that the *Oath* was taken at the beginning of the medical training: "He who wishes to begin the art of medicine and the science of nature ought to take the oath and not shrink in any way whatsoever from the consequences."

Not only were the ethics of the Hippocratic *Oath* praised as well as practiced, especially those concern-

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* For much of my information on Hippocratic ethics of the Middle Ages, I rely upon Loren C. MacKinney's paper.

ing the handling of women patients, the observation of secrecy, and the giving of abortives, but Hippocratic etiquette was taught and practiced. During the early Middle Ages, the era of Monastic Medicine, ethics and etiquette apparently were kept in a fine balance with the ethical precepts carrying a little more weight. This was not true of the later Middle Ages when the "despiritualization of the medieval physician" took place. This marks the transition from Monastic to Salernitan domination during the 12th century. MacKinney states: "Apparently, it was the late, but not declining, age of Greek medicine that stressed these same factors, which had been known but neglected during the age of Monastic medicine. Suffice it to say that this type of late Classical (and also late Medieval) etiquette is distinctly secular in character." This secularism did not begin at Salerno, but was emphasized and expanded by Salernitan literature; it ". . . evolved out of earlier practices, during the late-medieval era of rapid urbanization."

Early Bedside Manner

Thus the physician was instructed to ". . . pretend that the case is serious; thus, whether he survives or dies, your reputation is safe; in the sick room greet those present and pay compliments concerning the household before turning to the patient. . . ." Moreover, ". . . The Physician himself, when he calls, should enter the room with a hilarious countenance and a joyful voice saying: 'Hey there, what do you say? What sort of fun are you having?" . . . With such words the patient is encouraged. Finally, accept your remuneration graciously, and with a full purse and with joy and delight for one and all (if that be possible), by their leave go in peace." The gentle monk-physician of the early Middle Ages, who had embraced the great ethics of the *Oath* was replaced by the politic-loving, ever cheerful physician of carefully practiced etiquette.

One such monk was St. Gregory of Nazianzus. St. Gregory was well-acquainted with Hippocratic concepts of medicine and ethics, and practiced according to them. A contemporary of St. Gregory was Caesarius, a brilliant and talented physician. Sister Mary states that his patients, many of whom were the wealthy and influential of the area, had so much confidence in him that "they did not require of him to take the oath of Hippocrates." She goes on to say: "That such an exemption was at that time unusual is obvious from the context, but precisely what significance is to be attached to the statement cannot be determined, since neither Gregory nor any other writer of antiquity makes clear who took the oath and what binding force it possessed beyond its moral sanction."

One of St. Gregory's friends was Basil, a monk-physician of kind heart and unlimited generosity. He founded a hospital outside the walls of Caesarea where the poor were tended. ". . . so numerous were the sick and the poor who came there, and so admirable were the devotion and efficiency with which they were served," that St. Gregory considered the hospital ". . . to be numbered among the wonders of the world. . . ."

Gregory had something to say about the "unprincipled" physicians of the day who threatened their patient with deserting their cases unless paid the higher fees which they demanded for more difficult or serious cases. He also alludes to the "harsh and inhumane physician, who knows only the use of the knife and cautery in his methods." Perhaps this is an indication of a little Pythagorean distrust of the surgeon.

Medical Discoveries Kept Secret

Although there is evidence that the Hippocratics did not take part in this practice, physicians from the time of antiquity did not make public their medical discoveries. This was no less true in the Middle Ages. Gregory held this as unethical, for he believed a human life so valuable as to use all his own medical knowledge plus anything else that he could borrow from others' experience, in the relief of human ills. As in antiquity, he believed that the patient must follow the advice of the physician and that it was the patient's duty to report to the physician upon becoming ill, for the body is the product of the Creator and it must be cared for as though it were a part of the divine Being. Again, a hint of Pythagorean philosophy.

A large part of the explanation for the medical centers of the Middle Ages being in connection with the monasteries was the fact that Christ and his Apostles wrought miracles of healing and were thus considered "divine physicians." Although during Gregory's day, miraculous cures were recognized as the result of prayer, still medicine was not subjected to a religious framework. Medicine was the first resort, and when medicine could offer no more, prayer was considered the only recourse.

Dietetic measures, as mentioned in the *Oath,* were one of the main methods of treatment. "When the health of a patient is being restored by abstinence from food, or by means of a proper diet, overeating or carelessness in the selection of food may bring about a relapse."

An example of the hospitals wherein monk-physicians such as Basil and St. Jerome practiced according to the Hippocratic teachings was the Xenon or "hospital" of the Pantocrator of Constantinople, which was built during the 12th century A.D. Remarkable in its efficiency and completeness, it boasted of a complete house staff which, according to Codellas, consisted of physicians in chief, residents, internes, stu-

dents, nurses, midwives, and pharmacists. The wards of the hospital were divided into medicine, surgery, ophthalmology, gynecology, and psychiatry, and there was also a busy outpatient department with a complete staff. Provision was made for the "physician on call" to remain close to his critical patients by providing sleeping quarters near-by. The Abbot in charge of these monasteries, of which the Pantocrator is a superb examble, was usually a physician; he was the "superintendant" of the hospital. Each staff physician had to conform to hospital regulations which would not allow him to make long trips, "even if the emperor had commanded," he could not leave the city while on duty, and most remarkable of all, ". . . he was forbidden to allow a staff member of lower rank and less experience to substitute for him. . . ."

Change in Monk Medicine

In addition to the monk-physicians of Medieval Europe, there is evidence that before the Norman conquest, during the 9th and 10th centuries, there were well-educated monks in England who were also well-educated physicians, trained at Salerno and other famous European medical centers. Between the 10th and 13th centuries, the most prominent and sought-after physicians were monks. During the late Middle Ages, all this was to change for the Church began the task of casting medicine from its compass of intellectual endeavor. There was evidence of this activity as early as the latter part of the 12th century when Loucas Chrysoverges, the Oecuminical Patriarch forbade priests and deacons to become physicians because of the demand which both duties made of them; he felt that their clerical duties were being neglected because of the demands the practice of medicine made upon them. The Church began issuing canons which eventually resulted in the monks' complete abandonment of medical practice. More important to the extra-monastic study of medicine was the rise of the great universities and medical schools which provided the opportunity of medical education to the laity.

The growing emphasis upon medical etiquette as well as the sacrifice of medical ethics which occurred during the late Middle Ages is evident from the following examples. John of Ardeene, an English surgeon of the 14th century warned against the physician's intimate contact with any of the feminine members of the households he visited, against underestimating the patient's illness to the family, and against speaking unkindly of his colleagues to his patients; but the reason for advising such restrictions were more political than ethical, for he felt that in observing them, the physician would inspire more confidence in his patients and thus increase his clientele! Another English practitioner of the 14th century was one John of Gaddesden, whose ethics included such practices as asking for fees before beginning treatment, and prescribing ". . . twice as much drug for his rich patients as for his poor ones." He has been called an example of his time, and a "charlatan of the first order."

As stated before, the rise of the great universities, as well as the monks' abandonment of medical education gave the laity the opportunity to study medicine. It was the 15th century and the Renaissance had begun.

English Translations

Of all the Hippocratic writings, the Hippocratic Oath was the most popular in 16th century England, for it was the one work which appeared most frequently in its English translation. According to Dr. Larkey, there were four English versions of the Oath available to 16th century readers; these appeared in: 1) *A Detection and Querimonie of the daily enormities and abuses committed in physick,* London, 1566, by John Securis: 2) *The Olde Mans Dietarie,* 1586, by Thomas Newton; 3) *A most excellent method of curing woundes,* by Arcaeus, translation by John Read in 1588; 4) *The whole course of Chirurgerie,* 1597, by Peter Lowe. All four of these translations were apparently from different sources and either contained passages which were not known to have been in Greek originals or omitted ones which were. Each of these authors must have obtained his material from more than one source.

Newton's *Oath* contains two thoughts not expressed in the known originals. First, the physician must not be squeamish about bestowing his ". . . skill in this Arte upon the poore and needie, freely, without either fee or covenant certainly agreed upon."

Newton's second addition to the *Oath* refers to the abstinence from prolonging the patient's illness in order that the physician might gain monetarily or through the prestige offered by the healing of a prolonged illness.

In Peter Lowe's version he promises he will not give poison to any person, and furthermore, he will not teach any man how to "compose" it. He also has an interesting addition that, according to Dr. Larkey, appeared in an Arabic and an early Latin manuscript. "I shall patiently sustaine the injuries, reproaches, and loathsomenesse of sick men, and all other base raylings: and that I shall eschew as much as I may, all venerious lasciviousnesse."

There is a curious mix-up of the two clauses concerned with sexual deportment and professional secrecy in Lowe's version, that according to Larkey is not present in any other known manuscript. It is written as follows:

". . . and that I shall eschew as much as I may, all venerious lasciviousness. Moreover, I protest, be it man, woman, or servant, who is my patient, to cure them of all things that I may see or heare either in mind or manners, and I shall not betray that which should be concealed and hidden, but keepe inviolable, with silence, neither reveal any creature, under paine of death."

With a little manipulation of the punctuation, we come up with the more conventional version:

". . . and that I shall eschew as much as I may, all venerious lasciviousness, be it with man, woman, or servant who is my patient to cure. Of all the things that I may see or heare either in mind or manners, I shall not betray that which should be concealed and hidden, but keepe inviolable, with silence, neither reveal any creature, under paine of death."

In reference to Securis, Dr. Larkey writes: "That the *Oath* was of more than literary interest and was considered in an almost legal sense is seen in its application by John Securis. As I have said, he omits the portions that deal with the relation of the student to his master, with teaching, and with the penalties for violation of the Oath, but emphasized the rest of the *Oath,* the more practical aspects."

The preceding few paragraphs contain only a short commentary on the status of the *Hippocratic Oath* and ethics in England during the Renaissance. The complete story of the *Oath* during the Rennaissance cannot be told here.

A peek into the 18th century reveals an expansion of the ethics of the *Oath,* so that they were applied by the physicians to society in general, not just to their individual patients. This is most clearly seen in J. R. Frank's address to an 18th century graduating class of physicians, titled, "The People's Misery: Mother of Diseases." He is appealing for a better standard of living for the laboring classes of Italy. In his words can be found the expansion of the phrase of the *Oath* ". . . I will keep them from harm and injustice" with its Pythagorean meaning, "I deem it my duty to prevent men from doing harm to themselves." This expansion now includes all of society and Frank is in a sense saying, "I will keep society from the harm and injustice it has wrought upon itself." Here is a whisper of what is to take place during the next century, for the 18th century is beginning to realize that the public's health now needs protection, and great health reforms are beginning to take on life. That small, clear voice of a minority group of the 4th century B.C., echoing down through the vast corridors made by 2,500 years of history, now gains the proportions of a giant's bellow.

Editor's Note: References may be obtained by writing the JOURNAL OF THE KANSAS MEDICAL SOCIETY, 315 W. 4th Street, Topeka, Kansas.

Tumor Conference

(Continued from page 606)

metastatic tumor in her inguinal lymph nodes or elsewhere?

Dr. Boley: Not very likely. Liposarcomas tend to infiltrate locally, and usually do not metastasize until late in their course, and then more commonly via the blood stream. They may attain a huge size without distant spread.

Dr. Dressler: After we received the pathologic diagnosis of this mass, the patient was admitted to the hospital for further therapy. We have since done an extensive block excision of the wound down to the deep fascia, and also removed two of the lipomas in the back. Would you tell us what the microscopic findings on these are?

Dr. Boley: In the wound margins, we found the hemorrhage, inflammation and proliferating granulation tissue that would be expected in a healing wound. Examination of multiple areas failed to disclose any residual sarcoma. However, I am not too surprised at this since the sarcoma in the first specimen was almost entirely confined to the central portion of the mass. The masses removed from the back consisted of adult adipose tissue consistent with lipomas. There was no evidence of malignant change.

Dr. Don Miller: This case well illustrates the importance of removing subcutaneous lipomas or other tumors whenever there is the slightest doubt that the mass is benign. This is a good example of a mass which was thought to be a simple lipoma and turned out to be something much more important. One must have an active suspicion of possible malignancy in any subcutaneous nodule whose clinical features are at all atypical. About a year ago I removed a small subcutaneous nodule which resembled a fibroma or a sebaceous cyst but did not quite fit either diagnosis. The pathologist made a diagnosis of fibrosarcoma, and I had to recall the patient for a more radical excision. Because of this experience and others, I have a healthy respect for all subcutaneous nodules, and this is especially true if they are tender or indurated. Where malignancy is suspected, the nodule should be widely excised under a general anesthetic even though sometimes, or even frequently, the pathologic diagnosis will be that of a perfectly benign lesion.

Dr. Boley: Dr. Miller's comments cannot be overemphasized. If it is constantly borne in mind that the principal indication for the removal of tumors is their possible or potential malignancy, then inadequate excisions will become a rare occurrence.

Maternal Mortality

This 22-year-old Gravida III, Para II died in a small, well equipped hospital 11 days after a normal delivery. The baby weighed five pounds, 12 ounces. Certificate diagnosis was "post partum hemorrhage, ten days." Past obstetrical and general history were not significant. The patient's pregnancy was uneventful and prenatal care was adequate.

Labor began spontaneously at term and on admission to the hospital the patient was noted to be seven cm. dilated. Spontaneous delivery followed promptly. The placenta was expressed with no difficulty and one ampule each of Pitocin® and Ergotrate® were given. Ergotrate tablets were ordered every six hours for six doses. The patient was discharged in 48 hours having followed an entirely normal course.

Five days later she was readmitted because of hemorrhage and was seen by a physician other than the one who did the delivery. Pulse was 120 and blood pressure was from 108/70 to 80/58. Ergotrate, one ampule, and Kappadione,® five mg., were given and 1000 cc. five per cent dextrose in normal saline was started. Bleeding continued so a curettage was done three hours later by still another physician. Numerous placental remnants were removed. Two units of blood were given. A slight bloody discharge continued after this procedure and 19 hours later, another curettage was carried out with removal of more placental fragments. The uterus was packed. Some oozing continued and the following day the temperature went up to 101.4°, the pulse to 108 and blood pressure was 108/54. The pack was removed within 24 hours and the patient went home a day later with minimal vaginal bleeding, temperature 98 and apparently well stabilized.

Within five hours she was returned to the hospital with a copious pink discharge. Pre marin,® 20 mg., was given intravenously. Nine hours later the bleeding became profuse and she became faint, cold, and clammy.

The pulse was questionable and blood pressure was at shock level. Pre marin, 20 mg., was again given intravenously. Oxygen was instituted and Dextran® in saline was started along with 500 cc. of dextrose in water. Blood pressure returned to 114/70 within one hour. A pint of blood with 50 mg. Benadryl® was started in the early part of the afternoon with another unit following within 40 minutes; Desoxyn,® 40 mg., was given and the third, fourth, and fifth units of blood were given within the next three hours.

Pulmonary edema was noted with pulse increasing to 140 and a continued shock-level blood pressure. The patient expired late that same afternoon. During this time the patient had been prepared for an emergency hysterectomy but her condition deteriorated so rapidly that no surgery was started.

Committee Opinion

The post partum care of this patient would indicate that no single doctor felt completely responsible. Allowing the patient to go home 48 hours after the two curettement procedures, only to have her return in five hours and succumb in less than 24 hours suggests that the seriousness of her condition was never fully appreciated. Five pints of blood, if needed, were given too late. The immediate post partum period can be the most critical for the patient. It deserves all the attention, skill, and judgment possible.

Classification

Maternal death, direct obstetric, avoidable.

One of a series of case reports prepared by the Committee on Maternal Welfare to illustrate the type of study made in each instance of maternal death in Kansas.

The President's Message

DEAR DOCTOR:

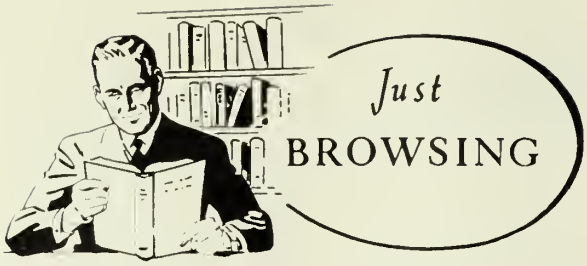
In reading a Kansas City newspaper, October 31, 1960, I noticed the election of a new president of the American Association of Medical Assistants. I took especial notice of this because going back several years, one realizes that the Kansas group had a great deal to do with the organization of the National organization.

Since its inception, the organization of the Medical Assistants has come a long way. For, realizing the important part they play in the life of a busy doctor, they felt an educational program was necessary. At the present time, they have a Seminar once a year which is held at the University of Kansas. They now think that a spring workshop would be of further help in increasing their efficiency in developing still better liason between patient and doctor and in understanding the now many complexities concerning management of the present office.

Of course, in increasing their knowledge, it requires time and expense and at times, they probably wonder if it is worthwhile. Maybe if we as doctors, who reap the benefit, would give a little more encouragement by word or deed, it would stimulate further interest and continued attendance.

Yours very truly,

President



I have been privileged to preview the page-proof of *Kansas: A Pictorial History,* which has been prepared by the Kansas State Historical Society for publication and release in January 1961, as a contribution to the Centennial celebration. The Kansas Centennial Commission has joined in sponsoring the book, which portrays life in Kansas from Coronado's visit in 1541 to the present. There is enough text to make the many illustrations meaningful. Illustrations

Ferry across the Kaw at Lecompton—1867.

(some of which are depicted here) have been selected both for the portrayal of significant events, and for their pictorial quality. Reproduction is beautifully done on fine paper, and the written story is concise but thorough—as interesting as the exciting story it tells.

The early history of Kansas is a thrilling episode in a crucial period of the history of the United States, and is interesting to the country as a whole. To Kansans it has even more interest, and this book will surely be one of the most popular of all that deal with the subject. There is no way to make it more interesting than by the use of pictures, and there is no better source of pictures on this subject than the Kansas State Historical Society. This book is recommended without reservation.

A companion Centennial publication, also published by the Kansas State Historical Society is *Kansas in Maps,* by Robert W. Baughman. It portrays the growth of Kansas and related parts of the West through 90 maps, 20 pages of which are in color. These reproductions, too, are of the highest quality, and this book will appeal to any who are at all interested in Kansas' growth. It is a fitting companion to

Kung brewery workers at Leavenworth—1874.

Kansas University panorama in 1896—The buildings, left to right are: Spooner, Blake, Frazer and Snow.

Kansas: A Pictorial History. Such a double offering of books of this quality seldom comes to us.

Both books may be ordered at a pre-publication discount price. Details are available through the JOURNAL office, or from the Kansas State Historical Society.—O.R.C.

The History of the Cross

You see it in churches. It adorns monuments, flags, and heroes' medals.

But few people know the fascinating story behind the symbol of the cross.

Centuries before Christ died, it was a symbol widely known throughout the ancient world. The Egyptians called it "canob," after a T-shaped instrument used to measure the annual rise of the Nile on whose bounty the life of the nation depended. For other nations of the East, it was an "urani," and took the shape of two pieces of wood with handles. By rubbing the two sticks together, the ancients kindled sacred fire.

As early as 1225 B.C., Greek worshipers of Bacchus offered their god cakes of flour with a figure of the cross imprinted on them. The swastika, or twisted cross, which became a symbol of terror in the 20th Century, appears on the oldest medallions of the Buddhists and was a mystical good omen in many Hindu sects.

The cross was used as an instrument of national punishment in the time of Abraham. As a gallows, it was familiar to the Egyptians, Africans, Macedonians, Greeks, and Romans. To various peoples it has meant a symbol of eternal life, productive power, or the life-giving qualities of the sun.

For Christians around the world, the cross is a symbol of their faith. It was on a Roman cross at Golgotha where Christ died, only to rise again three days later, so that, according to the Bible, "whosoever believeth in Him should not perish but have everlasting life."

In their days of persecution, faithful believers used the cross as a secret pass-sign, later wore it on their foreheads as a means of recognition. In 312 A.D. the Roman Emperor Constantine was inspired by a vision of the cross in the heavens to abolish crucifixion as a capital punishment and to venerate the cross as a symbol on the coin of the realm.

The early Christians portrayed Christ as the Good Shepherd, sometimes carrying a cross instead of a crook. From this evolved the custom of representing His people as sheep or lambs. By the end of the 6th century, the first form of crucifix showed the Lamb represented on the cross itself. Crucifixes came to be widely distributed by the Church as aids to devotion.

In 726 A.D. Emporer Leo II of Turkey prohibited reverence to ikons and images. His son Constantine V subsequently outlawed every image of Christ and the saints. Despite decrees, the monks and people persisted in their veneration of the cross. The historic Second Council of Nicaea, a conference of bishops, in 787 A.D. restored images as symbols of worship, stating: "For as often as they are seen in their pictorial representations, people who look at them are ardently lifted up to the memory and love of the originals."

The cross was the badge of a crusade in 1095, and became the emblem of the medieval military religious order of the Knights of Templars.

In the New World, the Spaniards conquered New Spain in the name of the cross. But they were astonished to find the holy emblem of their own faith already the object of worship in the temples of the Aztecs. Colossal stone monuments throughout Mexico attest to an Indian civilization which adored crosses similar in design to the Greek, Latin, and Maltese forms.

The cross of Lorraine, which Joan of Arc wore into battle, became General Charles de Gaulle's symbol in leading the French resistance movement during World War II. A Swiss welfare agency which adopted as its emblem a red cross on a white field—reversing the color scheme in the Swiss flag—in 1864 organized a conference to help the sick and wounded soldiers of the world. Sixteen nations attended and established the international Red Cross.

A plain gold cross, worn in the lapel and given free to those who wish it, is the emblem adopted by the largest radio mission in the world, The Lutheran Hour. More than six million gold crosses have been issued since the sponsoring Lutheran Laymen's League presented the first broadcast of this program more than 30 years ago. The emblems are now being requested by people in Communist-controlled lands. It is aired in English and more than 50 other languages over more than 1,200 outlets in the U. S. Its estimated weekly audience around the world is 25 million persons.

Drive Safely

for a

Happy Holiday

Season

Rehabilitation

One of the most worth-while state operated health programs is the Kansas Vocational Rehabilitation Service where handicapped citizens are first given medical care then vocational training for employment.

State officials have cooperated in a most gratifying way with Dwight Lawson, M.D., of Topeka, State Administrative Medical Consultant, and with his advisory committee on which Conrad M. Barnes, M.D., of Seneca; J. W. Campbell, M.D., of Lawrence; H. M. Glover, M.D., of Newton; and C. D. Hensley, M.D., of Wichita, are members.

A recent example of the excellent relationship established between this agency and The Kansas Medical Society came with their adoption of the Kansas Relative Value Schedule at $4.00 a point. This is the first state operated program that will utilize the Kansas Relative Value Schedule.

Because this is a most worth-while service, and because it operates fully in keeping with the free enterprise philosophy of medical care, this program should have the support of all physicians. You will, of course, give your usual careful attention to the patient under this program who selects you as his physician, but your special cooperation with the Vocational Rehabilitation Service is needed in promptly and accurately returning the necessary medical reports.

This program is important, and with your support, it will be demonstrated that the medical profession can cooperate with a governmental agency to the benefit of the patient. Thanks very much for your help.

White House Conference on Children

The composite report of findings of the White House Conference on Children and Youth, held in Washington, D. C. March 27-April 2, 1960, has arrived. Included are some 670 separate recommendations in such fields as social service, economics, family life, recreation, religion and health.

They represent what the conference, consisting of representatives from the entire nation, believed. It is a statement of problems affecting children and recommended solutions as agreed upon by majority vote of persons selected by each state and from federal offices to bring together the widest possible experience in the area of children's services.

Selected below are the principal resolutions in the general field of health. These subjects, voted by the Conference, will receive particular attention in the future by agencies and individuals who work with children. The health items are listed here because of their special interest to the physicians of Kansas.

No. 44. That the Federal Government, together with the States, intensify present efforts to develop new water supplies and improve the distribution of existing supplies.

No. 45. That intensive research be undertaken to determine the risks from radioactive chemicals in drinking water and to find ways of removing them.

No. 46. That State and local health departments initiate crash programs for the prevention of accidents to young children; that State and local legislation provide for safety in housing, traffic, and pedestrian control, and protected, supervised play space; and that safety education be included in the school curriculum as early as possible.

No. 47. That architects and engineers be alerted to health hazards to be avoided in designing or remodeling buildings and playgrounds.

No. 48. That community programs of accident prevention and public education be intensified, covering accidents in homes, schools, recreation centers, on farms and highways; supervision of toddlers and young children, and appropriate safeguards against carelessness of adults and older children.

No. 49. That all professional workers dealing with

infants and children emphasize accident prevention.

No. 50. That further research into the causation and prevention of accidents be encouraged and supported.

No. 138. That, among other things, the curriculum include physical education of high quality for all students of elementary and secondary levels, health education and nutrition at the junior high level and mental health education based on its moral, social and biological aspects and education for family life, including sex education.

No. 188. That each community re-evalute its school health services in the light of specific needs for:

improved instruction in health education, including nutrition, child development, and physical education with more health teaching and counseling;

a school lunch program with Federal funds to supplement community resources;

continuity of preschool and school dental and medical examination records;

early recognition and prompt treatment of disabling conditions;

sufficient numbers of school health personnel to identify and diagnose health needs.

No. 189. That all school personnel, including administrators, teachers, food handlers, and custodians, be required to pass yearly physical examinations, including a test for tuberculosis.

Nos. 382 through 415 are all on the subject of health and medical services. They recommend expanded health services, including public health services; that the Children's Bureau and the American Medical Association shall experiment with new methods for supervising the health of children in sparsely settled low-income areas.

No. 387. That States or local communities require inoculation of children against communicable diseases, in accordance with the procedures set forth by such scientific bodies as the American Academy of Pediatrics, the American Public Health Association, and the U. S. Public Health Service.

No. 388. That periodic examinations and continuous medical and dental care, including vision, hearing, and other problems, early detection and treatment of defects and abnormalities, as well as the prevention and early treatment of disease, be provided for all children, including those of mobile families.

No. 390. That communities provide the fullest possible protection against tooth decay by the fluoridation of water supplies.

No. 398. That community organizations join forces to:

acquaint children and youth with the causes of alcoholism, its effect on health and related problems and on traffic safety;

propose more creative use of their leisure time through effective alternatives to alcohol;

acquaint them with the laws of the community and State regarding the sale of intoxicants to minors;

alert adolescents to the increasing evidence of casual relationship between smoking and lung cancer.

No. 404. That health insurance programs be expanded.

No. 405. That all prepaid medical and hospital plans provide for immediate care of all newborns, including prematures.

No. 406. That the old-age and survivors and disability insurance programs be strenghened by revisions in coverage and benefit schedules and by provisions for the *health* needs of child beneficiaries.

No. 407. That each State establish a comprehensive mental health service for children, preferably in association with a university medical school or center.

No. 408. That mental health services be integrated into all basic public health services, with inservice training along these lines.

No. 412. That mental health training be required for all teachers.

Nos. 547 through 623 deal with handicapped children, including physical and emotional handicaps, in general recommending increased facilities and earlier attention.

Happy New Year

From each of us to each of you—Happy New Year! We wish you good health, happiness and success. We hope for you a year of challenge interesting enough to excite your best effort, a year of broadened horizons worthy of your talent.

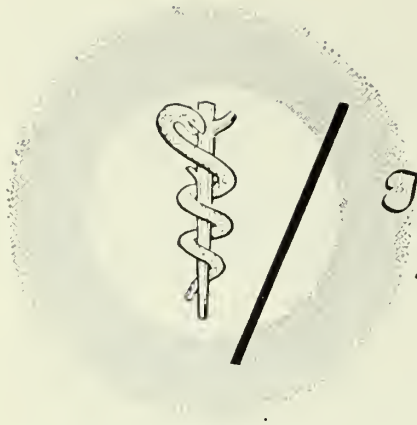
We hope something new happens, an achievement in which you take pride, an accomplishment of a goal, the realization of an ideal. We hope 1961 brings progress.

May the New Year be one of adventure with enough activity to escape boredom, with enough problems to sharpen your interest and with enough leisure to allow you time for reflection.

May your understanding bring you a new tolerance but with this, the talent to increase the knowledge of others for what it true. May your influence be proper. May you become instruments for progress and somehow, during this year, find the means for arousing in someone a new curiosity, the inspiration of an inquiring mind.

That we wish because of what it will mean to you, to the people you meet and to the practice of medicine. Each of us, your president, the officers, the

(Continued on page 623)



The Kansas Press Looks at Medicine

Editor's Note. In this section the* Journal *reproduces editorials relating to medicine which have appeared in the lay press. An effort is made to include both favorable and unfavorable comments, and the Editorial Board in no instance assumes responsibility for the opinions expressed.

Sanatorium at Norton Should Remain Medical

Forum Editor:

The site at Norton was selected and donated by the citizens of Norton. At that time there was a statement made as to why it was given (for the treatment of tuberculosis).

With the passing of the years the sanatorium has been beautified as it was felt that the patients who had been here for a long time should have that kind of surroundings.

In the passing of time rehabilitation has taught many patients how to work and for a long time we employed them as employes at the sanatorium. Finally it became obvious we should take care of chronic pulmonary cripples. Most of these people are short of breath. Many patients in going home found they were unable to work consistently partly because of shortness of breath and the amount of work they had to do, and they had to return.

The sanatorium finally became a fully accredited hospital, being accredited by the American College of Physicians, the American College of Surgeons, the American Hospital Association, the American Medical Association and the Canadian Medical Association, and has remained that way.

We have complete surgical equipment, operating rooms, laundry, power house, up-to-date kitchen, an All-Faith Chapel, so much so we have felt that we had the room to move Chanute patients up here and would take care of them any time.

We realize that the vacancies at the present time are caused partly by a narrow view as to what the meaning of this place is. We feel that a combined tuberculosis and chest hospital with the penal institution is decidedly not a wise choice. We feel the excess beds that are available at the present time should be used but we know there are many other ways to utilize these beds. We feel that any use of them should be along strictly a medical line.—LORETTA STEINKELLNER, Norton, Kan. *Topeka Daily Capital,* Nov. 5, 1960.

Family Doctor Not Vanishing

By EILEEN FOLEY

Approximately 150 general practitioners of Kansas are convening in the Baker this week—and not one horse and buggy parked in front of the building.

Has the long-revered "horse and buggy" doctor disappeared along with his outdated mode of transportation?

"No," comes the resounding reply from a modern-day medicine man. "The family doctor isn't vanishing—I think in the wake of the recent trend toward specialization that the public demands a return to his form of treatment."

Dr. O. J. Friesen of Buhler was doing the speculating. Only 33, he chose to become a general practitioner long before graduating from the University of Kansas School of Medicine four years ago.

He chose it because, in his words, "I felt I could more completely fulfill the medical needs of the entire individual this way."

"I don't plan to specialize," he added, "I have established my home in Buhler and expect to be there permanently, to serve that rural community."

It was more than a half-century ago that the horse-and-buggy doctor legend developed—a saint-like soul who sprinted through snow to set a broken leg, deliver

a baby, or simply listen to troubles, he had a more flawless reputation than the "through snow, rain and ice" postman.

One reason for such individual attention, conclude most analysts, was the overproduction of doctors which left one for every 568 persons. Today, with the rising costs and standards of medical education, there is only one doctor for every 709, and from 1931 to 1959 alone the ratio of family physicians dropped from 90 for every hundred thousand persons, to 46.

Sorely Needed

With the introduction of preventive medicine and scientific research, the expert skills of the specialist were sorely needed, and thus the trend developed.

But, says Dr. Friesen, this trend also has drawbacks. In focussing on his particular field of interest a specialist may miss a manifestation of illness in the field of another.

"A patient still needs to be treated as an individual," he said, "for disease affects his whole life, and sometimes family and home-connected situations are at fault."

"A family doctor can establish a more personal relationship with the patient," he said. "It's not easy for one to confide in a doctor he doesn't know—it takes much time to build up such confidence."

There are occasions, of course, when a specialist should be called in, he continued, "but this should be left up to the judgment of the general practitioner—he has had four years of medical school beyond college, and a year of internship—he is competent to make this decision."

The family doctor, then, as he sees it, is not only a health-restorer to his community, but can be a coordinator of specific health problems, one who looks at the whole patient picture—has his complete history, physical examination, laboratory study and continuing care.

How about the calls in the middle of the night? Do doctors still clamber out of bed to drive miles through the cold? (For some reason, every horse-and-buggy doctor story is set in the WINTER.)

Young Dr. Friesen squinted, mentally figuring the miles he makes during a month, and calculated 1,500.

"I make housecalls any time," he said, "unless I'm certain that an office visit would be more advantageous—unless they need laboratory or X-ray examination."

As for the night calls—he averages two hours an evening, with "regular" working hours from 7:30 a.m. to 6 p.m. daily, depending upon the demand.

But, concluded Dr. Friesen, the demand is there, and although the role of the family doctor has changed—he, for example, no longer is expected to make as many housecalls because of good roads and cars carrying the patient to town, nor to stay at the bedside until death due to modern hospital facilities—the physician who is a friend as well as a scientist is not fading.—*Hutchinson News,* October 21, 1960.

Editorials

(Continued from page 621)

editorial board of the JOURNAL and the personnel in your executive office, aware of what this could mean to the Kansas Medical Society, fervently ask that a little of the above also fall upon ourselves in your service.

Medical Assistants Pilot Workshop

The Education Committee of the Kansas Medical Assistants Society recently met with representatives of the University of Kansas Extension Department and the Kansas Medical Society Advisory Committee, to formulate plans for a two-day pilot workshop to be held at the Kansas University Medical School in April, 1961. This will be a forerunner of four or five similar circuit course workshops to be held in strategically located points over the state.

The primary purpose of these workshops will be to better enable the Medical Assistant to deal successfully with the patient on behalf of the physician. Those attending will learn of the latest developments in office procedures, which includes bookkeeping, collections, correspondence, filing, telephone techniques, etc. Specialists will learn of the latest developments in their field. It should be emphasized that this will be a participation workshop where Assistants will actually use the various techniques and procedures offered in the course.

Two Medical Assistants from each of the 21 member county Medical Assistants Societies will be carefully selected to attend this initial program, with the thought in mind that they will return to their respective societies to report on what they have learned.

The cost of putting on such a program has been established at $25 per person, plus transportation and, since the purpose of this course is to enable the Medical Assistant to do a better job for the individual physician, it was recommended by the Kansas Medical Society Advisory Committee on Medical Assistants that local medical societies sponsor two local representatives by providing two $25 scholarships.

Nationally, Medical Assistants have achieved an enviable record in establishing educational programs which will better enable them to serve the doctor and the patient. This state program is worthy of the support of the Medical Profession, particularly since it comes at a time when there is need for better understanding and closer relationship between the Medical Profession and the public. It is important that this program be supported individually and collectively, to assure its success.

The Business Side of Medicine

Selecting an Investment Fund

FLOYD F. WEHRENBERG, ***Kansas City, Missouri***

In previous articles we have discussed balancing of an investment portfolio with fixed and variable type investments and dollar averaging of cost.

The average doctor today has limited knowledge of investments and even more limited time for managing them. A properly selected program of monthly accumulation in one or more high-grade investment funds offers many advantages to him and can be used to fulfill his need for variable type investments. Such a program includes the advantages of capable management, diversification, dollar averaging of cost and outstanding growth potential.

How to Select One

How should a fund be selected for such a program? The market value factor with regard to investment fund shares is not an accident; the elements of diversification, selection and supervision play a major role in determining the value of a fund's shares at any given time.

One of the most common terms in the field of investment funds is "performance." This is used to indicate the varying results which fund managements have obtained, the results an investor might have achieved by investing in a given fund and, finally, the results of a fund which may be compared with other investment media.

What constitutes performance? (a) The change in market value of the shares over a given period; (b) income dividends paid by the fund; and (c) the amount of distributions made from security profits (capital gain dividends). These three combined constitute the measure of a fund's management ability to serve the shareholder within limits of a stated investment policy and a pre-set investment objective.

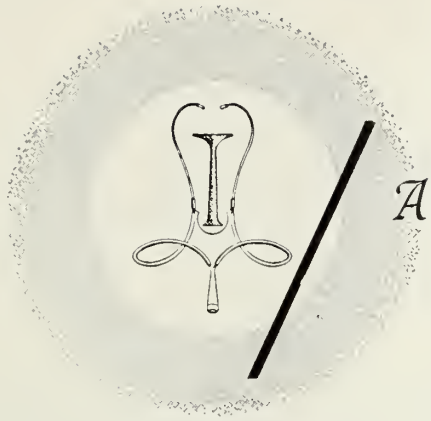
Consider the first of these factors, market value. If diversification is inadequate, shares of the fund will be subject to wider fluctuaton and greater risk; if selection is poor, fund shares will undoubtedly fail to reflect the general trend of the market; and if supervision is poor, the attainment of the fund's investment objective is certain to fail.

Another indication of management's ability is the amount of dividends and capital gains distributions paid over a given period. For example, a fund that is organized primarily to produce income will accomplish that purpose if properly managed while a fund geared to capital growth will show a greater appreciation and generally pay less income dividends if properly managed. A fund's dividend history will reveal how well it has achieved its goal.

It is frequently stated that on the average investment funds fail to perform as well as certain market indices. While this comment is statistically true, a simple but devastating fact is overlooked; that is, that an investor cannot buy a general market index so at no time can this index be a measure of actual or theoretical investor experience. The most a market index can show is a dominant trend.

(Continued on page 630)

Mr. Wehrenberg is Missouri-Kansas Manager, Professional Management Midwest, 4010 Washington Street, Kansas City, Missouri.



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. *Notice of the session is posted in advance to allow the physician time to make preparations.*

American Board of Obstetrics and Gynecology announces that the Part 1 Examinations (Written) will be held in various cities of the United States, Canada, and military centers outside the Continental United States on Friday, January 13, 1961.

Reopened Candidates will be required to submit Case Reports for review thirty days after notification of eligibility. No reopened candidate may take the Written Examination unless the case abstracts have been received in the office of the Executive Secretary.

Current Bulletins outlining present requirements may be obtained by writing to the Executive Secretary's office. Robert L. Faulkner, M.D., American Board of Obstetrics and Gynecology, 2105 Adelbert Road, Cleveland 6, Ohio.

The Annual Cardiovascular Seminar, sponsored by the Northeast Florida Heart Association, is now in its eighth year and is developing national interest. The Seminar will be held at the Prudential Auditorium, Jacksonville, Florida, January 26, 27 and 28, 1961.

The participating physicians are the following: Dr. William Dock, Prof. Medicine, New York State University; Dr. Lewis Dexter, Asst. Prof., Harvard University Medical School; Dr. Milton Rosenbaum, Prof. and Chairman, Dept. of Psychiatry, Albert Einstein College of Medicine; Dr. Richard Ebert, Prof. and Chairman, Dept. Medicine, University of Arkansas School of Medicine.

Further details and programs may be obtained by writing to Daniel R. Usdin, M.D., President.

The Gill Memorial Eye, Ear and Throat Hospital will hold its Thirty-Fourth Annual Spring Congress in Ophthalmology and Otolaryngology and Allied Specialties, April 10 through April 15, 1961. There will be 20 guest speakers and 50 lectures.

Further information may be obtained by writing E. G. Gill, M.D., Roanoke, Virginia.

The IVth International Congress of Allergology will be held at the Hotel Commodore, New York City, October 15-20, 1961. It is anticipated that this will be a large and interesting meeting for all of those concerned with allergic diseases and related fields of immunology. At the main meetings there will be simultaneous translations of all papers in English, French, German and Spanish. Prominent physicians and scientists, from all parts of the world, have been invited to take part in conferences, symposia and panel discussions. Among the subjects to be presented are:

> Genetics in allergy; Acquired tolerance; Transplantation immunity; Drug hypersensitivity; Contact allergy; General mechanisms in allergy; Mechanisms of antibody fixation; Delayed hypersensitivity; Auto immune processes; Steroid therapy; New methods in allergy, etc.

All physicians registering are invited to present communications which will be grouped in various sections according to subject matter. An active program of entertainment is being arranged with several receptions, one at the Metropolitan Museum of Art, and a Banquet. For the ladies, there will be a program of luncheons, fashion shows, and visits to the United Nations and other points of interest.

The registration fee for regular members will be $45.00, for wives $20.00. These registration fees will include the printed proceedings and admission to the receptions. The banquet will be charged separately. As the attendance is expected to be large, it is requested that persons interested obtain additional information from Dr. William B. Sherman, 60 East 58th Street, New York 22, New York.

Blue Shield

New Forms for Statements

New Blue Shield Statement Forms have been distributed to practically all of the 1,800 Participating Physicians in Kansas.

Presented on this page is a reproduction of the first sheet of this new form. The second sheet is attached and clearly marked "PHYSICIAN'S COPY" and is to be retained by the physician when the first sheet is mailed to Blue Shield.

An ample supply of these forms was mailed to each physician, accompanied by an order blank for additional forms.

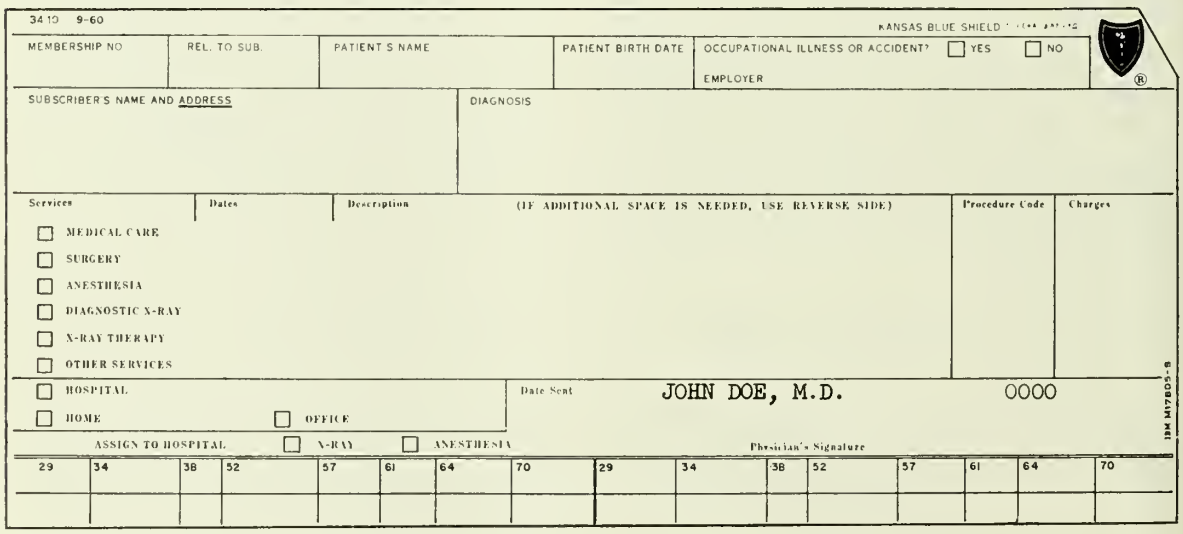
Introduced Earlier

This new Blue Shield Service Statement Form is the one introduced early this year with an eye to eliminating possibilities for errors, as well as saving time and money in operation. It is expected that it will result in more accurate payments to the physicians, and will also make it easier for medical assistants to complete, since information on these new forms has been reduced to a minimum.

This new card-form Service Statement is the size of an IBM punched card. It was first tried as an experiment with about fifty of the physicians in the Topeka area. It met with almost unanimous approval from both the physicians and their medical assistants in this initial group. They stated that it made their work far simpler, as well as helping to eliminate chances for error on their part.

The card which has now been mailed to all physicians has been redesigned in accordance with suggestions made by the Topeka physicians who used it.

(Continued on page 631)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KANSAS BLUE SHIELD

MEMBERSHIP NO | REL. TO SUB. | PATIENT'S NAME | PATIENT BIRTH DATE | OCCUPATIONAL ILLNESS OR ACCIDENT? ☐ YES ☐ NO | EMPLOYER

SUBSCRIBER'S NAME AND ADDRESS | DIAGNOSIS

Services | Dates | Description (IF ADDITIONAL SPACE IS NEEDED, USE REVERSE SIDE) | Procedure Code | Charges

☐ MEDICAL CARE
☐ SURGERY
☐ ANESTHESIA
☐ DIAGNOSTIC X-RAY
☐ X-RAY THERAPY
☐ OTHER SERVICES

☐ HOSPITAL
☐ HOME ☐ OFFICE

Date Sent JOHN DOE, M.D. 0000

ASSIGN TO HOSPITAL ☐ X-RAY ☐ ANESTHESIA

Physician's Signature

IBM M17805-S

29	34	38	52	57	61	64	70	29	34	38	52	57	61	64	70

Personalities—IN KANSAS MEDICINE

Dr. Robert Fairchild, Mission, spoke on "Health Problems of the Pre-School Child" recently at a meeting of the Overland Park Pre-school parents.

Dr. Fairchild is affiliated with the Mission Clinic, Mission.

Drs. D. J. Cronin, N. L. Francis, C. L. Gray, E. M. Harms, W. P. McKnight, D. A. Shrader, J. S. Reifsneider, E. E. Tippin, Jr., and **L. P. Warren,** Wichita, were among those attending the American Academy of Ophthalmology and Otolaryngology meeting in Chicago, October 5-8.

The Kansas Chapter of the American College of Surgeons held a meeting in Ellsworth with 40 doctors in attendance. **Dr. Clair O'Donnell,** Ellsworth, is president of the college for the coming year. President-elect is **Dr. William Valk** of Kansas City. A scientific program was presented in the morning and afternoon sessions.

Dr. Mary J. Blood, Wichita, attended the American Academy of Pediatrics meeting in Chicago, October 17-20.

Dr. Kenneth J. Gleason, Independence, was elected chief of staff at the annual election held during the November luncheon meeting of the Mercy Hospital staff in Independence. He succeeds **Dr. M. K. Borklund.**

Other officers for the coming year are: **Dr. Edgar H. Beahm,** chief elect; **Dr. William Chappuie,** secretary-treasurer.

Dr. Katherine Pennington attended the American Heart Association meeting in St. Louis, October 21-25.

Dr. D. G. Laury, Ottawa, began a three-day postgraduate course in obstetrics recently in Kansas City, commuting daily to attend.

Dr. Charles Rombold, Wichita, is author of an article in the July, 1960 issue of *The Journal of Bone and Joint Surgery* entitled, "Depressed Fractures of the Tibial Plateau, Treatment With Rigid Internal Fixation and Early Mobilization. A Preliminary Report."

Dr. R. Dale Dickson, Topeka, was elected president of the Shawnee County Medical Society at its 59th annual meeting. He succeeds retiring president **Dr. W. O. Martin,** Topeka.

Drs. A. E. Hiebert and **H. W. Brooks,** Wichita, attended the American Society of Plastic and Reconstructive Surgery meeting in Los Angeles, October 2-7.

Kansas Dietetic Assn. members attending the fall meeting in Wichita at the Allis Hotel heard **Dr. D. V. Preheim** of the Bethel Deaconess Hospital of Newton, Kansas, discuss the role of enzymes in the medical profession today.

Dr. Ralph L. Drake, Wichita, attended the meeting of the Multiple Sclerosis Society held in Kansas City, October 6-9.

R. G. Sheppard, M.D., Smith Center, was initiat-

(Continued on page 630)

NEW MEMBERS

The JOURNAL *takes this opportunity to welcome these new members into the Kansas Medical Society.*

Albert A. Armbruster, M.D.	**Lewis C. Blackburn, M.D.**
6001 W. 56th	600 Main Street
Mission, Kansas	Galena, Kansas

KMS Obituaries

DAVID T. LOY, M.D.

Dr. David T. Loy, 52, an ophthalmologist in Great Bend since 1939, died November 3, at St. Rose Hospital. Death was attributed to a heart ailment which had restricted his practice for the past five years.

Dr. Loy was born at Council Grove on October 26, 1908, the son of Mr. and Mrs. Jerone S. Loy. He was graduated from the University of Kansas School of Medicine in 1935, and was a member of Alpha Omega Alpha and Sigma Xi honor societies. He moved to Great Bend in June, 1939. In 1946 and 1947 Dr. Loy returned to the K.U. Medical Center to do post-graduate work in ophthalmology and in 1949 he received his board certification and became a diplomate of the American Academy of Ophthalmology. He served as an instructor at K.U. during part of his studies there.

His survivors include his wife, one son, a grandson, a nephew, two sisters, and his mother.

R. A. STEWART, M.D.

Dr. R. A. Stewart, pioneer Kansas physician who organized the first hospital in Hutchinson, died of a cerebral hemorrhage on October 25. He was 92 years old.

Dr. Stewart was born January 20, 1868, at Stewartsville, Va., and moved with his family to Alden in 1881. He graduated from Louisville University in 1890, and moved to Hutchinson in 1891.

Dr. Stewart and his brother, Dr. J. E. Stewart, established the first hospital in Hutchinson. It was one of the first in the state.

Dr. Stewart was an early-day member of the First Methodist Church in Hutchinson having been a member for 69 years.

Dr. Stewart made his home with his daughter. Other surviving relatives are a son and three grandchildren.

E. L. KALBFLEISCH, M.D.

Dr. Ernest L. Kalbfleisch, 78, who practiced medicine in Newton for many years passed away August 27 in Phoenix, Arizona at the Valley of the Sun Nursing Home.

Dr. Kalbfleisch was born in 1882 and attended Columbia University College of Physicians and Surgeons in New York City, where he received his M.D. degree in 1916.

He was a member of the Harvey County Medical Society since 1933 and retained his membership in our Society after moving to Arizona.

Christmas Behind the Iron Curtain

Russian propaganda doesn't overlook a thing—it is even directed against Christmas. Says Khrushchev: "There is no room in the modern Soviet for the religious superstitions which give meaning to the observance of Christmas."

A milestone in the Soviet onslaught on the Christmas joys of normal childhood was reached in the mid 1950s, when the Ministry of Light Industries for captive Eastern Europe decreed that "Children's toys may be produced for propaganda purposes only . . . dolls, teddy bears, and other toy animals must be dressed in uniforms of the Communist Party army, police or organized labor groups."

While this edict inflamed parents, it inspired the toy makers. They marketed an ideological game called "Path to Peace," which was widely distributed at Christmas time in public halls and schools by Father Frost, the Red substitute for Santa Claus.

Since the "Paths to Peace" game was bewildering even to mature adults, it definitely was not for children with below-average I.Q.'s. The tools of the game consisted of a map of the globe and six dice carved with colored peace doves. If, after a player cast his dice, he reached the capital of a "People's Democracy"—a Red-controlled country such as Romania, Bulgaria, Poland, Hungary, Czechoslovakia—he won a point. But if he reached a Western capital, he lost all his points. He was even worse off if he landed in Washington, D. C.—he was thrown out of the game! One capital significantly missing was Belgrade, because Communist officials who censored the game during its initial production could not decide whether landing in the Yugoslav capital was an advantage or not. Presumably, an improvement in diplomatic relations with the Yugoslav leader Tito might some day put Belgrade back on the map.

Humor as a Weapon

Though Christmas is generally a drab affair behind the Iron Curtain, there are signs of hope poking up like crocuses through the hard crust of Soviet repression. Shortages in the stores around Christmas time come in for ridicule in the Polish press. A cartoon in a Warsaw newspaper showed an angry crowd jamming around a depleted toy store counter before Christmas. Stuck in the throng are two department store St. Nicholases, and one says to the other: "One must be a saint, indeed, colleague, to stand this."

Humor is one of the few weapons that the Davids of the press in the captive lands have to combat the humorless Goliath of the Party propaganda machine. While the Church press continues to expound the Christian doctrine of the birth of Christ, its efforts are usually rigidly controlled. The Party press tends either to omit mention of Christmas or stress its worldly or social aspects.

Free World Pressure

The captive press does what it can to needle the Communists from within, while strong assaults on the Iron Curtain come from the outside. Radio broadcasts from the Free World are tearing an increasingly larger hole in the Iron Curtain. For the past ten years, 76 million people in the conquered countries have relied on Radio Free Europe's broadcasts as their strongest day-and-night link with the Western World. And for the sixth straight year, The Lutheran Hour's annual Christmas broadcast will be beamed from radio networks in Russian satellite countries. This year the message of Christ will be broadcast over networks in Czechoslovakia, East Germany, Hungary, Poland, Romania, and Yugoslavia, as well as other lands throughout the world. Dr. Oswald Hoffmann, regular Lutheran Hour speaker, will read the Biblical account of the Savior's birth and will offer a Christmas prayer to conclude the special worldwide broad-

Despite every pressure exerted against it, Christmas church attendance has grown to acceptability in Soviet satellite states.

cast, which will be sent to about 55 countries in 30 languages.

The Soviet "Christmas"

Long a harassed refugee from Communist rule in Eastern Europe, Christmas is making a comeback in Poland, Hungary and Czechoslovakia. In Romania and Bulgaria, however, it has never emerged from the pall of Stalinism.

But even at the peak of Stalinist rule, the Party did not attempt a direct all-out assault on Christmas. The technique was to divert attention from it by splitting up its symbols and ceremonies between Stalin's birthday on December 21 and New Year's Day, with Christmas an ordinary working day in between. The Christmas tree became simply a "winter tree," and Saint Nicholas (Santa Claus or Father Christmas, as the local custom might be), became the Soviet "Father Frost" distributing gifts to the children on New Year's Day as a symbol of Soviet generosity toward the satellites.

After 1953, the reaction against Stalinism plus an emphasis on national culture and living standards, brought back some of the regional holiday customs. Increased tolerance toward religious worship restored a measure of the Christian meaning of Christmas. Even in rigidly controlled Czechoslovakia, mass church attendance on Christmas Eve appeared to be acceptable by 1956.

Christmas Day is still a working day, with no decorative signs of the season visible. The holiday has taken refuge in the countryside where the peasants, freer from scrutiny and with at least the fruit of their own farm plots, can still give it a token welcome. The Poles hold their traditional family Christmas Dinner on Christmas Eve, and place straw on the table to symbolize the straw-lined manger of Bethlehem. It is also traditional to set an extra place at the table as an indication of hospitality to a passing stranger. The Christmas Eve menu is meatless and composed mainly of fish delicacies, such as fish noodle soup, carp in sweet raisin sauce, and pike in horseradish sauce. The meal concludes with such desserts as poppy seed strudels and *kutia* made from wheat and honey.

Father Frost

Father Frost, the Soviet answer to Santa Claus, is a flat-stomached male athlete, sometimes bearded but mostly not, whose muscularity is demonstrated by the fact that he can drive his red sleigh apparently with greater skill than the mythical "eight reindeer." But for all his physical prowess, his career has been spotty. Forcibly introduced into the satellite countries between 1950 and 1952, he was passively assimilated in Bulgaria, totally rejected in Hungary, and merely tolerated for three or four years by the Poles who then threw him out with the rest of the trappings of Stalinism.

The Soviets will doubtless continue trying to put a "frost" on Christmas in the satellite countries, but such forces for truth as the Free World's radio broadcasts and the undying spirit of freedom among the conquered peoples show signs of thawing the cold front presented by the Iron Curtain.

The Business Side of Medicine

(Continued from page 624)

Comparing Relative Things

When making comparisons the fund investor should compare the things that are relative to each other; that is, compare funds with similar investment policies and objectives and fund results with what he himself could do on his own. Actual comparisons have shown that just as funds fail to equal market indices, so do a large proportion of individual investors' stock portfolios.

To summarize, performance is the most important single factor in judging the merits of an investment fund. Too often familiarity with a fund, local availability of a fund or the amount of load or brokerage charge is erroneously used as a basis for making a choice.

Performance records on the many funds are available through your broker, investment counselor, and through such publications as Wisenberger's "Investment Companies" and Johnson's "Investment Company Charts." These performance records should be studied carefully before a choice is made.

Personalities

(Continued from page 627)

ed into membership in the American College of Surgeons in San Francisco in October.

Dr. C. Arden Miller, Dean, University of Kansas Medical School, presented a speech before the Tri-County meeting of the Marion, Harvey, and McPherson County Medical Societies recently. His topic was "Hopes for the Future Expansion of K.U.M.C." Also speaking at this meeting was **Dr. Galen M. Tice,** chairman, Department of Radiology, K.U.M.C. Dr. Tice's subject was "Upper Gastrointestinal Lesions by X-ray."

Dr. Joseph A. Budetti, Wichita, attended by invitation the International Symposium on Otosclerosis held at the Henry Ford Hospital in Detroit on November 10-12.

The Urge to Sue

Growth of Malpractice Suits Has Put U. S. Doctors on the Defensive; Last Year's Cases Totaled Estimated $50 Million in Costs and Settlements.

More and more U. S. doctors are learning a bitter lesson: medicine is an inexact science, but there is little room for error as far as the courts are concerned. According to the American Medical Association, one in every seven physicians has been sued for giving treatment that a court may decide is contrary to accepted rules and injurious to the patient. Last year alone, 6,000 doctors were sued. Jury awards in malpractice suits have nearly trebled since 1950; lawyers' fees, court costs, damages and out-of-court settlements in last year's cases totaled an estimated $50 million.

The result, *Time* says in a survey of the growing trend, is that almost 95 per cent of all U. S. doctors carry malpractice insurance and many feel like sitting pigeons for unscrupulous patients and lawyers. Some doctors now dodge giving aid in Good Samaritan cases, which form a small but rich field for malpractice suits. Such emergency accident cases demand haste, often catch the doctor ill-equipped and ill-prepared.

Doctors Vs. Lawyers

General Counsel C. Joseph Stetler of the A.M.A. attributes the urge to sue on exaggerated stories of new drugs, methods of treatment and "miracle" surgery, which "lead the public to believe that anything less than a perfect result is per se evidence of negligence." Some doctors insist that only 10 per cent of all malpractice suits have any merit; the rest, they claim, are nothing more than "legalized blackmail."

Not so, say trial attorneys like San Francisco's Melvin M. Belli, who estimates that he has filed more than 1,000 malpractice suits (75 actually went to trial), relieved doctors and insurance companies of $8,000,000 in judgments and out-of-court settlements. Belli says that "most of the verdicts are justified, because judges and the law have put so many safeguards around doctors." He points out that in some states (e.g. Arizona, New Mexico) malpractice suits are "very rare indeed," because doctors flatly refuse to give testimony that would show medical negligence by their colleagues. Doctors' self-imposed silence has prompted two states—Massachusetts and Nevada—to permit use of standard textbooks in court to establish prudent practice.

Lost Sponges, Mismatched Blood

A.M.A. studies show that two-thirds of malpractice claims originate from in-hospital accidents. Sponges occasionally are sewn into patients' stomachs (a group of California hospitals recently reported a run on "lost sponges"—18 in a single year). Obstetricians have been known to deliver one baby and quit, leaving its twin behind. Surgeons have removed a kidney only to discover that one is all the patient had. A more common cause: transfusions of mismatched blood, which kill about 3,000 patients a year in the U. S., injure thousands more. In such cases, where human error is clearly responsible, courts hold that the injured patient need not produce expert testimony to prove the physician's negligence.

Doctors also have been sued for failing to spell out risks. *Earlier this year, after a Kansas woman suffered burns from radio-active cobalt therapy for her breast cancer, her physician was judged negligent—even though the treatment was skillfully performed—simply because he failed to tell her there was risk of radiation burn and therefore, said the court, had not obtained her "informed consent" to the treatment.*

(Ed. Note: The JOURNAL has carried several articles about this court action.)

St. Peter Says Go Back

Out of fear of malpractice suits, many doctors have become careful, and even ultra-cautious, about the kind of medicine they practice. The results: higher costs and—in certain cases—poorer medical care. Some anesthetists now shy away from medically advisable spinals, because the public imagines them to be dangerous and thus is prone to sue if something goes wrong. Many general practitioners no longer will dispense telephone advice or permit prescription refills. Doctors dislike these dodges, but they feel in real pocketbook danger. A joke going the rounds among physicians has St. Peter greet a man at the gates of heaven saying: "You weren't due here until 1965. Go back and sue your doctor for malpractice."

Blue Shield

(Continued from page 626)

Physician's Name on the Card

One quite important change in the new form is the fact that the physician's name and code number will appear on the card when it is received by him. It is believed that this one change alone will serve to greatly reduce errors in payment.

This new form will be *used only in standard cases.* It does *not* eliminate the forms for "individual consideration" and "intensive medical care" cases.

If there are questions about the new forms, or if any physicians have not received their supply, they should contact Blue Cross-Blue Shield, 1133 Topeka Boulevard, Topeka, immediately.

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Wyandotte	Wray Enders, Kansas City	William W. Abrams, Kansas City

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